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NOTICES:—All communications relating to editorial matter should be addressed to the Editor, who will be pleased to consider articles or contributions dealing with modern chemical developments or suggestions bearing upon the advancement of the chemical industry in this country. Communications relating to advertisements or general matters should be addressed to the Manager.

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Coal Carbonisation Research

IN the course of the discussions on the Trade Disputes Bill there was one interruption which illustrated the advantage of having men of scientific and commercial experience in the House of Commons. It was the motion by a Labour member calling attention to the national importance of scientific research as applied to coal, and it gave Dr. G. C. Clayton, M.P., a director of Imperial Chemical Industries, a member of the Fuel Research Board, and a member of the Advisory Council of the Department of Scientific and Industrial Research, an opportunity of summarising what is already being done in this direction. Incidentally emphasising the importance of enabling those who buy and sell coal to know definitely what they are buying and selling, and of giving greater attention to the washing of coal, Dr. Clayton described broadly the position of research into low-temperature carbonisation at the Fuel Research station, in conjunction with industrial interests. What was of newer interest, however, was his reference to the hydrogenation of coal on the Bergius principle. At the Fuel Research station, he stated, there is a small plant in operation dealing with about a ton of coal per day, and it is giving extraordinarily good figures. When, some time ago, there

was a danger that the British Empire rights in the Bergius process might be lost to this country, the Department of Scientific and Industrial Research advised the Government to secure some control over the patents, and an option on a considerable amount of the interest in the British rights of the Bergius process had now been acquired by Imperial Chemical Industries. While this process itself has hardly gone beyond the large experimental stage, a modification of the process has been worked out by the German I.G., and a full scale plant is now at work. The output is in the neighbourhood of 100,000 tons of coal oil per annum, and, in the opinion of representatives of Imperial Chemical Industries who recently inspected the plant, it is working extraordinarily well, and is going to be a commercial success. The important point is that understandings appear to have been reached which ensure that, should these processes prove commercially successful, they will be worked within the British Empire.

In a further statement by the Duchess of Atholl, some important details were disclosed concerning the Government arrangement with Sir D. Milne Watson for the formation of a Fuel Production Co., Ltd. Sir D. Milne Watson, it may be remembered, was asked to advise the Government on various processes that are being developed both in this country and on the continent, and his conclusion was that the process worked out at the Fuel Research Station was the most promising for development in conjunction with a gasworks. While his company would not be justified in taking the whole risk of its development, he was prepared to offer a site for a 100-ton a day plant and to erect the plant and run it as continuously as was reasonably practicable for a period of three years, and to carry out experiments and researches in connection with the carbonisation of coal, provided that the Government would pay the original cost of providing and erecting new plant necessary on the selected site.

The final arrangement between Sir D. Milne Watson and the Government is that a subsidiary company be formed to be known as the Fuel Production Co., Ltd., the capital of which has been guaranteed under the Trade Facilities Act. The Gas Light and Coke Co. are appointed managers for the fuel company, and will bear all running and management costs. The gas company at the end of 1930 have an option to purchase the plant, or, if they do not wish to do this, they will clear the site and dispose of the plant, etc., on behalf of the fuel company. Details of this plant are now being worked out, and it is expected that the scheme will be in operation next winter. The company has undertaken to keep full records of experiments and all statistics necessary to demonstrate the results

obtained. The Mines Department will have the right to inspect accounts, and the Research Department the right to inspect the plant, its working and all technical details. Public interest in any patents that may be taken out as the result of the experiment will be duly safeguarded, and full details of the plant and the results obtained will be at the disposal of any company desirous of working the process. The Gas Light and Coke Co., in short, are carrying out the work for the benefit of the industry and the public, and the results, it is to be hoped, will justify Sir Milne Watson's judgment and enterprise.

Professor Willstätter's Faraday Lecture

FOR the delivery of the Faraday lecture, the Chemical Society has enlisted, at various times, a number of eminent foreign scientists: amongst others, Dumas came from France, Cannizzaro from Italy, Helmholtz and Fischer from Germany, Arrhenius from Sweden, and Richards and Millikan from the United States. For this year's lecture, delivered on Wednesday at the Royal Institution, London, the Society maintained the high standard set in the past by procuring the services of Professor Richard Willstätter. As the president of the Society, Professor H. B. Baker, pointed out in his introductory statement, Faraday and Willstätter were alike in one respect—both of them had carried out researches on the borderline of chemistry: Faraday's work lay in the region of physical chemistry, while Professor Willstätter has concerned himself with the biological aspect of the subject, more especially with plant chemistry.

It was, moreover, especially appropriate that the subject of Professor Willstätter's address should have been "Problems and Methods in Enzyme Research." The problem of the nature and action of enzymes is closely bound up with the question of catalysis and catalytic action, and, as the Professor reminded his audience, Faraday, in that very Institution, had carried out some work on the catalytic action of platinum as far back as 1833. In presenting his subject, Professor Willstätter showed the immense difficulties which have to be overcome in the study of the enzymes. About his own achievements he was very modest, but the mere statement of the facts—especially in regard to the purification of the substances in question—was a sufficient indication of the grave problems with which this line of research is beset. The manner in which the most recent advances of science can apply to what seem to be remote matters was shown by the lecturer's suggestion that light might be shed on certain problems of catalysis by considerations derived from Schrödinger's wave mechanics. Great, however, as have been Professor Willstätter's achievements in the realm of enzymes, it should be remembered that in earlier years he won renown (and a Nobel prize) in another branch of plant chemistry—namely, for his work on the colouring matters of flowers, the anthocyanins. Following closely as it does on the presence of Professor Schlenk at the recent annual dinner of the Chemical Society, the visit of Professor Willstätter indicates that intercourse between the chemists of Germany and Great Britain has once more been freely and cordially resumed.

American Potash Prospects

THE policy of financing an effort to discover commercial potash deposits in the United States, first started in 1910, and renewed last year by a grant of \$100,000 per annum for a period of five years, is quietly being prosecuted, and we learn from the Washington Bureau of Mines that work is in progress on several potash exploration sites. The idea still persists that America ought by some means to acquire command of her own potash supplies, instead of depending on Germany and France. The policy definitely dates from 1910, when the U.S. Government's surveys of American raw materials for potash manufacture were inaugurated, and the progress of the work is now reviewed by Dr. J. W. Turrentine, who is in charge of the potash investigations of the Bureau of Soils, in a useful volume, "Potash: A review, estimate, and forecast" (J. Wiley and Sons, 15s.).

The work undertaken falls roughly into three periods. From 1910 up to the outbreak of the war the authorities were principally occupied in reconnaissance surveys of possible sources of potash. During the war, when European supplies were cut off, the aim was the development of all the sources of potash discovered and surveyed. The post-war period may be described as one of deflation. This is convincingly shown in the tables of domestic production. In 1915, for example, the total value was \$342,000. By 1918 this had reached \$15,839,618. By 1922 the value had again declined to \$463,512. So that little has actually been done to increase American potash supplies except under the artificial stimulation of war conditions. During this period the sources placed under development were principally the brines of the lakes and marshes, kelp, cement dust, blast-furnace dust, Steffens waste, orstallery waste, alunite, leucite, greensand, Georgia shales, and wood ashes. Domestic production reached a maximum of about 55,000 tons actual potash in 1918. At that time additional and enlarged plants were about to be put into commission which would probably have doubled this amount. It is estimated, therefore, that there was a potential producing capacity of approximately 100,000 tons actual potash. With the reappearance of German potash on the American market, American potash industries for the most part, with a few important exceptions, practically suspended operations.

Surveying the work throughout this period, Dr. Turrentine's definite conclusion is that potash produced from known American sources must be yielded as a by-product or with by-products if it is to compete with foreign potash. For example, in the experiments made to produce potash from kelp it presently became evident that the potash extracted could not be regarded as the main product. It was soon discovered that the charcoal residue remaining after the extraction of the potash could by a simple method of treatment be converted into an active bleaching or decolorising and purifying carbon useful as a substitute for bone black and in demand in many industries. A process was devised which made it possible to produce the decolorising carbon at a very low cost, thus enabling this one product to bear the main items of expense involved in the entire process for the manufacture of

kelp products. The carbon therefore came to be considered the main product, and potash as well as iodine fell into the position of by-products.

Concluding the outlook from the American point of view, Dr. Turrentine predicts that the United States is in sight of an early and successful solution of its potash problem. From industrial wastes, in industries already operating on a successful basis, a large portion of present and future potash requirements may, it is estimated, be recovered. It only requires a vigorous application of the necessary chemical and engineering qualities. His view, generally, is that the problem is one of by-products. In various mineral deposits already surveyed there are additional quantities of potash, enormous in extent and practically inexhaustible, but unavailable at present and likely to remain so until further research has discovered more profitable methods of recovery. The quantities of by-product potash at present available for American agriculture are estimated at 247,700 tons, while the potential figure is put at 605,000 tons. Of this potential figure blast furnaces supply 200,000, cement 189,000, borax 60,000, and alcohol 16,000. The survey ends in the belief that the United States has potash supplies in quantities sufficient for the present needs of American agriculture and for the greatly increased needs of the future for an indefinite period of time. All that is needed is that American chemical skill should find a way of recovering it efficiently and profitably.

"Tear Gas in China"

IN spite of the conferences at Geneva and the general dislike of the use of toxic gases in war, American chemists show no sign of weakening in their resolve to regard the chemical arm as the most benevolent of military operations. Their attitude is expressed with what British people would regard as surprising frankness in the current issue of *Industrial and Chemical Engineering*, the monthly journal of the American Chemical Society. "It would be difficult," the journal states, "to imagine an occasion where harmless tear gas could have been used to greater advantage than at the beginning of the present disturbances in China, which have reached serious proportions. Instead of controlling mobs and effectively chastising that part of the Chinese population which sought to do violence to foreigners, those in command chose to use shot and shell. The result is a number of dead and wounded, the sacrifice of practically all the good results achieved through constructive work over several decades, and the laying of a foundation for revenge and hatred which will handicap even the most unselfish work which the white race may undertake in China for years to come. Why are such blunders continually repeated? Tear gas has been shown to inflict no injury. Its manufacture and use are well known. Its efficiency in producing both physical and psychological effects has been demonstrated. It is difficult to see why, with all our talk of humanitarianism, when the crucial moment arrives we choose to kill and weep afterward, rather than to cause weeping first with its consequent diversion of attention and effort. Our sentimentalists seem to prefer to weep at the prospect of non-toxic tear gas rather than over gunshot casualties. There is little excuse for failure to have used tear gas

in China. It may still be employed effectively, but powder and steel have already wrought much permanent damage."

We can certainly testify to the efficiency of the tear gas produced at the Edgewood Arsenal in inducing a flow of tears and in diverting attention and effort. It was a pleasant afternoon in the "Fall" on the East Coast, in surroundings that suggested good sport with dogs and guns. A few containers of tear gas were opened on a meadow, under the direction of General Fries and the staff. It seemed all right until the breeze suddenly veered round. The spectators were instantly reduced to the condition of a funeral party, and at once decided to adjourn for tea. We can well believe that such an experience would be an excellent pretext with the philosophic Chinaman for turning his attentions elsewhere without the least regret.

Stone Preservation

WHILE the problem of decay in building materials had long been recognised, it did not cause general concern until national attention was attracted, in the middle of the nineteenth century, by the rapid decay of the stonework of the Houses of Parliament. In recent times the trouble has become widespread in many parts of the country. In December, 1922, the Department of Scientific and Industrial Research set up the Stone Preservation Committee to consider the best methods by which decay, especially in ancient structures, may be prevented or arrested. A report on the progress of the committee's work is now published (H.M. Stationery Office, 1s. 3d.). The committee found that it was first necessary, for the prosecution of their work, to arrange for a thorough investigation of the various types of decay in relation to the character of the stone and the climatic and industrial local conditions. Broadly speaking, the study has two aspects: (a) chemical, physical and geological, and (b) biological, and, obviously, owing to the difficult nature of the fundamental researches, speedy results cannot be hoped for. The description in the report of the technique devised for the study of thin sections of friable decayed stone may be of special interest.

Books Received

- BRITISH CHEMICAL ABSTRACTS. Issued by the Bureau of Chemical Abstracts. Index, 1926. London: Gurney and Jackson. Pp. 430.
 OLD CHEMISTRIES. By Edgar F. Smith. London: McGraw-Hill Publishing Co., Ltd. Pp. 90. 12s. 6d.

The Calendar

May 24	Royal Photographic Society: Scientific and Technical Group: "The Chemical and Photographic Properties of a series of typical Cyanine Dyes." Dr. F. M. Hamer and Olaf Bloch. 7 p.m.	35, Russell Square, London, W.C.1.
25	Faraday Society: Annual General Meeting. 8 p.m.	13, South Square, London, W.C.1.
28	North of England Institute of Mining and Mechanical Engineers: "Variable Speed Gears and their Application for Colliery Purposes." W. S. Armstrong. 3 p.m.	Mining Institute, Neville Hall, Newcastle-upon-Tyne.
June 9	Optical Society. 7.30 p.m.	Imperial College of Science and Technology, London.

Chemical Trade Returns for April

A Steady Improvement

THE Board of Trade returns for April indicate the following position with regard to the chemical industry:—Imports of chemicals, drugs, dyes, and colours, £1,458,517, an increase of £123,740 on April, 1926; exports, £1,839,025, an increase of £137,036; re-exports, £89,963, a decrease of £5,986. For

the four months ending April 30, 1927, the imports were £5,795,110, an increase of £680,143; exports, £7,300,753, a decrease of £580,765; and re-exports, £297,552, a decrease of £104,120. Details of the returns are given in the following tables:—

Imports					Quantities.				Value.			
					Month ended		Month ended		Month ended		Month ended	
					April 30,		April 30,		April 30,		April 30,	
					1926.	1927.	1926.	1927.	1926.	1927.	1926.	1927.

	Re-exports		Value.	
	Quantities.		Month ended	
	Month ended		April 30,	
	1926.	1927.	1926.	1927.
CHEMICAL MANUFACTURES AND PRODUCTS—				
Acid Tartaric.....cwt.	164	310	991	1,705
Borax.....	1	116	3	125
Coal Tar Products value	—	—	439	458
Glycerine, Crude...cwt.	—	—	—	—
Glycerine, Distilled "	—	—	—	—
Potassium Nitrate (Salt-petre).....cwt.	84	37	143	61
Sodium Nitrate... "	2,902	33,981	1,906	20,542
Tartar, Cream of... "	870	296	3,452	1,416
All other Sorts.....value	—	—	18,425	10,143
DRUGS, MEDICINES, ETC.—				
Quinine and Quinine Salts.....oz.	18,011	19,455	2,309	2,342
Bark Cinchona.....cwt.	525	498	5,107	5,000
All other Sorts.....value	—	—	38,798	35,458
DYES AND DYESTUFFS—				
Cutch.....cwt.	3,288	2,230	4,956	3,462
Other Dyeing Extracts cwt.	39	232	299	1,961
Indigo, Natural.... "	3	3	74	87
Extracts for Tanning "	9,461	1,882	8,888	2,914
PAINTERS' COLOURS AND MATERIALS.....cwt.	1,652	666	6,546	3,257
Total of Chemicals, Drugs, Dyes, and Colours.....value	—	—	95,949	89,963

Safeguarding of Key Industries

THE Board of Trade give notice that representations have been made to them under Section 10 (5) of the Finance Act, 1926, regarding the following articles:—Didial (ethyl morphine diallyl barbiturate), ethylene glycol, and glycol ethers.

Any person desiring to communicate with the Board of Trade with respect to the above-mentioned application should do so by letter addressed to the Principal Assistant Secretary, Industries and Manufactures Department, Board of Trade, Great George Street, S.W.1, within two months from the date of this notice (May 18).

An order dated April 27 has been made by the Treasury under Section 10 of the Finance Act, 1922, exempting the following from the duty imposed on it by Part I of the Safeguarding of Industries Act, 1921, as amended:—Cadmium mass (consisting substantially of finely divided metallic cadmium and iron partially oxidised) in respect of its content of cadmium hydroxide (cadmium mass content of cadmium hydroxide—L.P. s.c.). The exemption is made under the provision of Section 10 that an exempting order may be made in the case of an article which is liable to duty by reason only that some ingredient or part of the article is liable to duty under the Act, where the Treasury are satisfied that it is inexpedient having regard to the nature of that ingredient or part and to the smallness of its value in comparison with the total value of the article that duty should be charged.

Power Alcohol from Nipah Palm

ACCORDING to the specification of a recent patent granted to Mr. A. P. Mackilligan, of Changkat Asa Estate, Tanjong Malim, and Mr. F. Garland, of Ipoh, Federated Malay States, it is proposed to manufacture power alcohol from the nipah palm, and the specification describes a mixture of alcohol and ether which it is claimed can be employed in existing petrol engines without any alteration. Interesting features of this patent are the wide range of proportions of alcohol and ether designed, it is stated, to allow for increased compression in existing engines if desired by employing a smaller proportion of ether which will give greater power with alcohol than is possible with petrol. A quite original feature is the employment of "Caoutchoucine," a substance which is described as being the distillate of crude plantation rubber passing over between 176° and 180° C. This ingredient is used as a denaturant, and it is claimed that it is particularly suitable for employment in countries where large supplies of crude plantation rubber of inferior quality, such as earth scrap rubber, are readily available at low cost. In view of the establishment of a naval base at Singapore, and also a flying base, the fact that a suitable fuel can be obtained within the confines of the F.M.S. will be a very great asset.

Oils, Chemicals and Colours A London Exhibition in June

THERE is every indication, we learn, that the International Oil, Chemical, and Colour Trades Exhibition, which is to be held at the Royal Agricultural Hall in London, from June 11 to June 18, and which is the first of its kind in this country, will be an outstanding success, and the firms in the industries who have decided to defer participation until the next exhibition of its kind will be wishing they had been wise before the event. The reasons are not far to seek.

Both to exhibitors and visitors, the forthcoming exhibition offers something fundamentally different from such previous displays as the British Empire Exhibition at Wembley and the British Industries Fair at the White City. The chemical-making and using industries are so comprehensive and are so intimately bound up with the chemical plant industry and the oil industry that any exhibition segregating these various branches can only achieve partial success and must inevitably mean a considerable proportion of disappointed exhibitors and of disappointed visitors. In the very comprehensiveness of its original conception the International Oil, Chemical, and Colour Trades Exhibition contained the germs of success. Its promoters know the trade, and the trade itself realised soon enough that here was the opportunity of showing their materials and machinery to the whole of the people they want to show them to, and not merely to a more or less important section.

One feature which has particularly gratified those responsible for the organisation of the exhibition has been the large number of the smaller manufacturers who have seized the opportunity of exhibiting. Some of these manufacturers have never exhibited before, probably because they have not found an exhibition sufficiently comprehensive and at the same time sufficiently specialised for their needs. The larger firms have also realised the peculiar advantages of the forthcoming trade show and have hastened to secure advantageous positions to display their products to users with whom they have not hitherto easily been able to come into contact by the ordinary channels. One of the smaller exhibitors the other day expressed the hope that the one or two larger firms who are suffering from a disease which may be diagnosed as "exhibition-weariness" and are still undecided on coming to the Agricultural Hall, may not be bedridden until too late.

Whatever may be said as to the merits or demerits of Shepherd's Bush and Wembley as exhibition centres this much is certain, that the Agricultural Hall is London's recognised trade exhibition centre. The time, too, is opportune. London this June will be crowded with visitors—Provincial, Continental, Empire, American, and others. What more natural than that those interested in any branch of the Oil, Chemical, and Colour industries should make a point of finding time to pay a visit to the recognised exhibition centre? The trade is looking forward to the coming exhibition. Post-war difficulties are gradually smoothing themselves out, British chemical and colour products and plant never stood upon so high a pinnacle, and the trade boom is coming.

The space open is now limited, but full particulars as to conditions and stand room still available may be obtained from the organisers, The International Trade Exhibitions, Ltd., Broad Street House, Old Broad Street, London, E.C.2.

A Famous Testing Plant and Laboratory

INFORMATION reaches us from an American correspondent that fire has totally destroyed the historic Westport mill and testing laboratories of the Dorr Co. on the banks of the Saugatuck River at Westport, Conn. This mill dates back to revolutionary days, when it was operated as a cotton mill. Among the rafters was found recently a book containing "Articles, rules, orders and regulations made and to be observed by and between the members of the Friendly Associated Cotton Spinners," established 1795. The mill workers in those days were fined or expelled, according to this document, for ungentelemanly conduct at meetings (including attendance while intoxicated), publishing the amount received as wage, fighting with another member or superior in work, disobeying laws or participating in riots, or for "combining together to raise the price of their wages, contrary to law." When cotton spinning waned in the vicinity, the mill was converted to a grist mill and furnished excellent buckwheat flour as far as New York City.

The Trade Unions Bill

By Sir Ernest Benn

In two or three weeks' time most of the present discussion on the Trades Disputes and Trade Unions Bill will be forgotten. Most of the points which loom large in Parliamentary debates and newspaper articles will have passed out of the public mind, and a new Act of Parliament will be upon the Statute Book, waiting, like every other new Act of Parliament, for the Courts, through weary legal processes and years of argument, to tell us what it means.

The discussion on the present Bill is composed very largely of expressions of opposite opinion as to the meaning of the Trades Disputes Act of 1906. We have nothing but the Astbury judgment, still subject to revision by the Court of Appeal, and the House of Lords to tell us whether a general strike is or is not legal under the existing law, and when the new Bill is passed no one doubts that the lawyers will continue to argue the same point in the same sophisticated way. There is this further difficulty about a general strike—that it does not really matter whether it is legal or not. Law depends in the end upon the ability of the police to enforce it, and no police, nor even any army, could enforce a law which said that, on a given day, a few million people were not allowed to stop at home instead of going to work.

A couple of years ago, in a totally different connection, Mr. McKenna said that it did not matter whether the gold standard was good or bad. All that mattered was that people believed it to be good or bad. Similarly with the general strike. It does not really matter whether it is legal or illegal, but it does matter a very great deal whether people believe it to be legal or illegal. The Britisher is, beyond everything else, a law-abiding creature.

The importance, therefore, of the present Bill lies in the fact that it will, notwithstanding all that the lawyers may say now or hereafter, put it into the minds of nine out of ten of us that the general strike is an illegal and undesirable and impossible thing, and if that is in our minds, no general strike is ever likely to occur again. The same considerations apply in a more limited way to the second of Mr. Baldwin's four points, and the new Bill will rectify and steady public opinion and Trade Union opinion on the question of intimidation. The 1906 Act put the Trade Unions into a very privileged position, gave them rights which, if used for industrial purposes, nobody desires to deny to them, and the new Bill will do no more than limit those rights and privileges to what was intended when they were originally conferred. In 1906, Parliament, with the full force of public opinion at the back of it, was determined to do something to smooth out the economic inequality between the employer with a bank balance and the employee dependent from week to week upon his wage. The new Bill has been necessitated not by any desire to undo the good work of 1906, but by the necessity to stop the abuses which have arisen since then. It aims at bringing back the Trade Union to its industrial purposes.

The closest examination of the Parliamentary discussions, if, indeed, much that has been said in Parliament can be dignified with the name of discussion at all, shows that the first two of Mr. Baldwin's principles, the general strike and intimidation, are accepted by at least some people in all parties. Labour leaders alternate two arguments on these two points. First they say that the general strike is illegal at present, and next that they object to a new law to make it illegal. Secondly, they say that there is no such intimidation as is alleged, and next they object to a law defining an abuse which they claim does not exist. It is only when we come to the third of the Prime Minister's four principles that we touch the crux of all the trouble about this new Bill.

The Labour Party is undoubtedly very much concerned about the political levy. But here again the argument is very difficult to follow. We are told that there is no compulsion to pay the political levy, and, indeed, some of the Parliamentary debaters argue that this Bill will so incense the labouring classes that they will pay the levy with greater enthusiasm and in greater numbers. If that be so, surely the Labour Party should support the Bill. No argument on the matter to-day can tell us with any certainty what is likely to be the result of the alteration of the law in regard to the political levy. In point of fact, the whole of the political levy and the whole of the registered Trade

Unions' attitude in the matter rest upon 683,000 votes that have been given for the levy, while 272,000 members voted against. In some of the important unions the total poll was barely 10 per cent. of the total membership.

In the unregistered Trade Unions, of which forty are known to have taken ballots on this question, 478,000 members voted for the levy and 305,000 against.

There are thus certainly over half-a-million trade unionists who have definitely cast their votes against the imposition of a levy. When, however, it comes to claiming exemption from the payment of the levy, we find that at the end of 1925 only 104,797 trade unionists took the trouble to go through the necessary formalities.

These figures do not, however, furnish the best argument on this branch of the controversy over the Bill. The nation has to make up its mind whether or not it will accept Trade Unionism. In 1906 we thought that we had settled that question. Employers' associations everywhere have reached the view that Trade Unions are proper and convenient things, and that it is both wise and good that labour should be organised into Unions. From this we have almost reached the position where, in many trades, it is impossible to get employment without a Union card. Those who think this a desirable state of affairs must, on reflection, give whole-hearted support to the proposal to alter the political levy, for, unless this is done, we are nearing the stage when employment will depend not only upon membership of the Trade Union, but upon membership of the Labour Party. However pleasing such a thought may be to the Socialist politician at the moment, he must, on reflection, see that a position like this cannot last. He cannot be conceited enough to think that his particular section of the Socialist party is bound at all times to succeed in securing the support of the public and the working class, and so the life of Trade Unionism itself, instead of being a solid, steady part of the Constitution, will be a series of ups and downs depending upon the success or failure at particular moments of Mr. Ramsay MacDonald, or Mr. Wheatley, Mr. J. H. Thomas, or Mr. A. J. Cook.

The new Trade Union Bill should give a new life and a new spirit to industrial Trade Unions for the benefit of all parties to industry, and it will do this if it makes it easier for the rank-and-file Trade Unionist to distinguish between his industrial interests and his political views.

Fleet Street Tours

In our issue of May 14 we gave some particulars of a series of weekly tours of Old London, which are being organised from Bouverie House throughout the summer season, under the direction of Mr. A. S. Walker, a recognised authority on this subject. Any of our readers or their friends who care to join will be welcome at Bouverie House at 2.45 p.m. The ramble will occupy about two-and-a-half hours and will conclude at Bouverie House, where a cup of tea will be served to the visitors in the staff canteen. It will be seen from the following list that the tours extend from June 21 to September 27, and readers who desire to join are requested to select the date of the party they wish to join from the following programme. A form of application is appended:

Tuesday, June 21	The Temple.
Wednesday, June 29	St. Clement Danes.
Tuesday, July 5	St. Bride's, Fleet Street.
Wednesday, July 13	The Royal Courts of Justice and Record Office Museum.
Tuesday, July 19	Priory Church of St. Bartholomew, Smithfield.
Wednesday, July 27	The Charterhouse.
Wednesday, August 3	Central Criminal Courts.
Tuesday, August 9	St. John's Priory Church.
Wednesday, September 7	St. Paul's Cathedral.
Tuesday, September 13	St. Martin's, Ludgate.
Wednesday, September 21	St. Andrew-by-the-Wardrobe.
Tuesday, September 27	Staple Inn.

To the Editor of THE CHEMICAL AGE, Bouverie House, Fleet Street, E.C.4.

I desire to join the tour fixed for

Signature

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Oil and Colour Chemists Membership and Work of the Year

THE ninth annual general meeting of the Oil and Colour Chemists' Association was held at the offices of the National Federation of Paint, Colour and Varnish Manufacturers, in London, on Thursday, May 12, Mr. C. A. Klein (president) in the chair. The accounts, which show a small credit balance, were adopted.

The annual report of the Council showed that the membership had increased by 22 during the year after allowing for resignations, etc., the total number of members elected being 46. The membership roll on May 1, 1927, stood at 369, consisting of 102 associate members and 267 ordinary members. The Council makes a special appeal to all members, in entering upon the tenth year of the existence of the Association, to do their utmost to make this year a record one in regard to new members. Although throughout the past nine years the increase in membership has been steady, there have not yet been enrolled, it is pointed out, all who might, with advantage, take an interest in the work of the Association. An effort is being made during the coming year to induce the younger members of the trade to become junior members of the Association.

The report placed on record appreciation by the Council of the services rendered by the retiring members of the Council and also by the hon. officers. An account was also given of the work in connection with specifications and standard tests.

The Research Association

Referring to the Research Association of British Paint, Colour and Varnish Manufacturers it was pointed out that a preliminary programme of research had been drawn up, and it was hoped that the laboratories, situated at Teddington, would shortly be ready for occupation. The Council of the Oil and Colour Chemists' Association was co-operating with the Research Association in every way, and it was hoped that in the near future some scheme for joint abstracts of technical literature might be evolved.

Dr. J. J. Fox and Mr. J. A. F. Wilkinson had been appointed to represent the Association in an informal inquiry into the standardisation of British screens, and recently an invitation had been received from the British Engineering Standards Association for the nomination of a representative on a Committee which had just been formed to investigate this subject. Particular reference is made in the Report to the improvement in revenue from the sale of publications, especially abroad.

Dr. Morgan's American Visit

The President, in proposing the adoption of the report, read a letter from Dr. H. H. Morgan, who is now on a business trip in America, in which "Greetings and good wishes" were conveyed to the Oil and Colour Chemists' Association from the Paint and Varnish Division of the American Chemical Society at their annual meeting and at the banquet at which Dr. Morgan was the guest of honour. In forwarding these greetings Dr. Morgan added that the members of the Paint and Varnish Division of the American Chemical Society expressed appreciation of the good work done by the Oil and Colour Chemists' Association in the past year through the medium of its journal, and by publishing research on fundamental problems. These greetings and good wishes are to be suitably acknowledged.

The following officers and members of Council were elected for the session 1927-28: President, Mr. C. A. Klein; Vice-Presidents, Messrs. T. M. Lowry, H. H. Morgan, W. S. Morris, and T. M. Tyson; hon. secretary and treasurer, Mr. S. G. Clifford; ordinary members of council, Mr. R. G. Daniels and Mr. J. N. Goldsmith; associate member, Mr. T. Clayton.

At the conclusion of the annual general meeting a paper was read by Mr. A. de Waele entitled "Some physical factors influencing the properties of paint pigments." The paper gave a further account of Mr. de Waele's work of a fundamental research character into the properties of paint pigments, and although during the discussion it was suggested that he was inclined to form rather too definite conclusions from simple experiments, the author was highly commended for the work he is doing, and the hope was expressed that he would continue it.

Air Ministry Research on "Knocking" Peroxide Formation as a Cause

THE issue of THE CHEMICAL AGE for February 12 contained an article describing the results of research on detonation ("knocking") in motors, carried out at the Air Ministry Laboratory at the Imperial College of Science, London, under Captain R. O. King, as a result of which it had been concluded that detonation in an engine using liquid fuel was due to the formation of organic peroxides. The full description and discussion of this work is now issued by the Aeronautical Research Committee as *Reports and Memoranda*, No. 1062 (E.23): Dopes and Detonation, Second Report, by Professor H. L. Callendar, F.R.S. Experiments made in the Air Ministry Laboratory at the Imperial College of Science, London, under the direction of R. O. King, by Dr. E. W. J. Mardels and Messrs. W. J. Stern and N. R. Fowler. December, 1926 (London: H.M. Stationery Office, pp. 31, 1s. 3d.). It is stated in this report that "the conclusion from these experiments is that detonation in paraffin fuels and ether is due to the accumulation of peroxides in the nuclear drops during rapid compression. The amount of peroxide formed would not in itself be sufficient to cause the detonation observed, but acts as a primer by simultaneous ignition of the nuclear drops. The metallic dopes act by reducing the peroxides as fast as they are formed, and preventing their accumulation, thus delaying the ignition of the drops. There can be little doubt that the formation of peroxides, like that of nuclear drops, is greatly favoured by increased density of charge, as in a boosted engine. The highest useful compression ratio of any fuel is thereby lowered, and the addition of dope is required to make the efficiency of a boosted engine equal to that of an unboosted engine, using the same fuel. If metallic dopes are employed, it would appear that the boosted engine may require an excessive quantity, which might lead to serious trouble. It is hoped that new methods of preventing peroxide formation, and consequent detonation, may be discovered, when the properties of the peroxides have been more fully investigated."

Chemical Matters in Parliament Imports of Dyestuffs in 1926

Replying to Lieut.-Commander Kenworthy (House of Commons, May 10), Sir P. Cunliffe-Lister (President of the Board of Trade) stated that the value of finished dyestuffs, obtained from coal tar, imported into the United Kingdom in the year 1926, was £876,529, and in the first three months of 1927, £290,308.

Bergius Hydrogenation Process

Lord E. Percy, in answer to a question by Col. Day (House of Commons, May 10), stated that the experimental work on the Bergius process for hydrogenation of coal was proceeding satisfactorily.

It was too early, as yet, to give any detailed results, and it must be some considerable time before the process could possibly come into commercial use.

Zinc Concentrates

Sir P. Cunliffe-Lister, in reply to Sir John Power, who put a question (House of Commons, May 17), wrote that the financial results of the zinc concentrates contract for the year ended March 31 last could not be stated at present, but it was anticipated that the accounts for both the past year and the current financial year would show a loss of between £500,000 and £600,000 in each year.

Society of Glass Technology: Annual Meeting

THE annual meeting of the Society of Glass Technology was held in Sheffield recently. Mr. W. Butterworth, senior, M.A., was re-elected president, and the following officers were elected to fill vacancies:—Vice-presidents, Messrs. H. A. Bateson and W. J. Rees; ordinary members of council, Messrs. J. D. Canwood, F. G. Clark, G. V. Evers, W. W. Warren, and Miss V. Dimpleby; honorary treasurers, Messrs. J. Connolly (general) and P. C. Flint (American); honorary secretary, Professor W. E. S. Turner; auditors, Mr. C. S. Davey and Mr. D. Wood, F.S.A.A. The annual meeting was followed by an ordinary one, at which Professor Turner inaugurated a discussion on "Furnace Efficiency."

From Week to Week

INDIGO CROPS in British India in 1925-26, according to the provisional report on agricultural statistics just issued, covered 134,000 acres.

AN EXPLOSION OF POWDER caused severe injury to Phyllis Crump, aged 21, of Aston, Birmingham, while she was working at the Witton works of Kynochs, Ltd., on May 12.

A GIFT OF £10,000 towards the establishment of the proposed Chair of Dietetics has been made to London University by A. Wander, Ltd., manufacturing chemists, of King's Langley, Hertfordshire.

MR. N. HACKNEY, B.Sc., F.I.C., M.Inst.Met., assistant chemist and metallurgist to the Great Indian Peninsula State Railway, has been transferred to the North Western State Railway as chemist and metallurgist, from April 1.

MR. C. MONTAGUE SMITH, of Burt, Boulton and Haywood, Ltd., Bilbao, and Mr. E. Mein, of the Cookson Produce and Chemical Co., Ltd., were among the visitors to the offices of the British Chamber of Commerce in Spain during the month of March.

MR. J. H. THOMPSON, B.Sc., Agricultural Lecturer for the North Riding of Yorkshire, has been appointed Agricultural Adviser to the Potash Syndicate, in succession to Mr. W. Smith, of Newcastle, who is to take up the post of Agricultural Adviser for Scotland.

I. G. ENGINEERS have, it is stated, been in Louisiana (United States) recently inspecting certain properties with the idea of establishing in the Monroe district a nitrogen and dyestuff plant. As limestone is one of the essential raw materials that they will require in their operations, the quarries near Monroe, La., are being given careful consideration.

IN ADDITION TO THE ABANDONMENT of Broxburn Oil Works and Dunnet Mine, the Pumpherson Oil Co., at the instance of Scottish Oils (Ltd.), have issued a notice to their workmen that No. 4 mine, Pumpherson, and Pumpherson Crude Works will not be reopened. The refinery at Pumpherson Oil Works is being carried on, the crude oil from Roman Camp Works (Broxburn Oil Co.) being dealt with there. It is said, also, that output is to be reduced at certain other shale mines.

ANCONA COLLEGE TOURING CAR, of which the offices are at 27 Guilford Street, W.C.1, is in need of representative British literature, news and trade papers. The car is going on tour, and embodies a miniature lecture hall, library, and living accommodation for the students of a future residential college, where the social structure of the various aspects of the nations of the world will form subjects of tuition, and which will be open to students of all nationalities. The visitors to the car will be mainly business men.

ARCOS (The All-Russian Co-operative Society), whose premises were raided by the police last week, act as merchants and agents for the Soviet Government. The bulk of Russian trading business still goes through Arcos, including a considerable business in chemicals. Included in Russian chemicals marketed by them in this country are caustic soda, sodium nitrite, sulphide of soda, ammonium nitrate and magnesite. Ozokerite and isinglass are also imported. It is understood that a large export trade in British heavy chemicals is also done. The firm was registered in 1920 as a private company with a capital of £15,000. This was subsequently increased to £1,000,000, of which £900,000 is paid up.

ARTIFICIAL SILK forms the subject of one of the articles on the Third Census of Production (1924) which appear in the *Board of Trade Journal* for May 12. The total production of artificial silk in 1924 is given as 25,525,000 lb., as compared with an estimated total of not more than 3,000,000 lb. in 1912. Exports in 1924 amounted to 6,351,000 lb., and net imports to 10,151,000 lb., or about 25 and 40 per cent. respectively of the quantity produced in Great Britain. The total quantity available for consumption in the United Kingdom was 29,325,000 lb., rather over 65 per cent. being of home production and nearly 35 per cent. imported. The average number of persons employed in the industry was 39,211 (Great Britain only), as compared with 34,500 in 1912, and 31,668 in 1907.

RECENT WILLS INCLUDE:—Mr. Robert Douglas Hendry, of Ailao, formerly head dyer and analytical chemist at Patons and Baldwins, £15,909.—Mr. Henry Folland, of Blackhill, Swansea, who started work as a pit boy, chairman of the Grovesend Steel and Tinplate Co., and a director of Richard Thomas and Co., Ltd., High Sheriff of Carmarthenshire, £484,470 (net personalty £315,552).—Mr. William Longman Corry, of Caterham Valley, Surrey, for many years managing director of Corry and Co., Ltd., manufacturing chemists, London, £23,633 (net personalty £21,598).—Jocelyn Brudenell, sixth Earl of Chichester, of Stanmer, Lewes, Sussex, chairman of Borax Consolidated, Ltd., Eastcheap, London, E.C., £227,311 (net personalty £226,041).—Mr. Thomas Whitaker, of St. Annes-on-Sea, until his retirement manager of Whitaker Brothers and Co., Airvale Dyeworks, Newlay, £22,599.

THE ANNUAL DINNER of the Society of Glass Technology was held at the Hotel Cecil, London, on Wednesday, Mr. Walter Butterworth (president) occupying the chair.

M. HERRIOT, French Minister of Public Instruction, states definitely on behalf of the French Government that a synthetic substitute for petrol has been found.

SIR HARRY and LADY MCGOWAN, on May 18, gave a dance at the Green Park Hotel, Piccadilly, London, in order to celebrate the coming of age of their eldest son Harry.

DR. R. H. PICKARD, F.R.S., who was recently appointed director of research to the British Cotton Research Association, has been elected to the Senate of the University of London.

LADY RAMSAY has presented a gift of valuable chemical apparatus to the Wycombe Royal Grammar School, from the laboratory of the late Sir William Ramsay, the distinguished chemist.

SIR THOMAS HOLLAND will read a paper on "The Institution of Mining and Metallurgy" before the Empire Mining and Metallurgical Congress which will be held in Canada next August.

A CROWD OF ABOUT 30,000 PEOPLE watched a serious fire which occurred on the night of Friday, May 13, at the works of Kynochs, Ltd., Witton, Birmingham, when a pattern shop and contents were destroyed and damage estimated at £20,000 was done.

AT THE CHARTERED SECRETARIES' CONFERENCE in Liverpool on Tuesday, Mr. W. H. Coates, LL.B., B.Sc., F.C.I.S., of I.C.I., read a paper on some aspects of the recent report of the Colwyn Committee with special reference to the effect of taxation on trade.

AUTOMATIC AND ELECTRIC FURNACES, LTD., of Elecfurn Works, 173-175, Farringdon Road, London, E.C.1, inform us that they have entered into an arrangement with Carlo Brivio, of Via Principe Umberto 25, Milan, Italy, for the manufacture and sale of Wild-Barfield electromagnetic furnaces in Italy.

DEATH BY MISADVENTURE was the verdict recorded by the Hendon Coroner, sitting with a jury, at the inquest on Wednesday on Walter Jarrett, aged 46, of York Road, Cranbrook, Ilford, and Leonard Garrett, aged 28, of 6, Paul Street, Stratford, E., who were killed by the explosion of a still at Johnson and Sons, Manufacturing Chemists, Ltd.'s chemical works at Hendon on January 31.

A DENIAL HAS BEEN ISSUED of the statement, made in the Press last week, to the effect that the Belgian Tubize Co. has arranged with the German Glanzstoff undertaking to hand over to that firm the German, Austrian, Hungarian, Czecho-Slovakian, and Japanese markets on the condition that the latter establishes an acetate silk factory, the Tubize Company to receive 1½ per cent. on all sales, and, in addition, 35 per cent. of the shares of the Acetate Company formed last year by the Glanzstoff.

THE SECOND LECTURES in metallurgy, arranged by the Armourers and Braziers Company, will take place on June 1 and June 14. The former, on "The Oxidation, Corrosion, and Passivity of Metals," will be given by Mr. U. R. Evans at the Royal School of Mines, South Kensington; and the latter will be given by Dr. W. H. Hatfield, director of research, Brown-Firth Laboratories, Sheffield, at 6.30 p.m., at the Sir John Cass Institute, Jewry Street, London, the subject being "Special Steels and Their Application to Engineering."

APPLICATIONS ARE INVITED for the following appointments: Fellowships (Salters' Institute of Industrial Chemistry) for chemists of post-graduate standing. The Director, Salters' Institute of Industrial Chemistry, Salters' Hall, St. Swithin's Lane, London, E.C.4. June 1.—Grants-in-aid to young men and women (17 years of age and over) employed in chemical works in or near London. The Director, Salters' Institute of Industrial Chemistry, Salters' Hall, St. Swithin's Lane, London, E.C.4. June 10.—Professor of Organic Chemistry in Indian Institute of Science, Bangalore. Dr. M. O. Forster, c/o Jeremiah Lyon and Co., 4, Corbet Court, London, E.C.3. June 29.—Sir Clement Royds Memorial Scholarship in Chemistry in the University of Manchester, for research and advanced study, open to inhabitants of the County of Lancaster, preference being given to the County Borough of Rochdale. The Registrar. June 1.—Lecturer in Physical Chemistry in the University of the Witwatersrand, Johannesburg, South Africa. The Secretary, Office of the High Commissioner for the Union of South Africa, Trafalgar Square, London, W.C.2. June 1.—Part time research organiser to the Institute of Brewing. Applications and three recent testimonials to W. H. Bird, Secretary, Brewers Hall, Adle Street, London, E.C.2. June 3.—Lecturer in chemistry, Regent Street Polytechnic. Salary according to Burnham scale for technical teachers. The Director of Education, the Polytechnic, 309, Regent Street, London, W. Before September.—Two Robert Blair Scholarships in Science and Technology, value £450 each for one year. The Education Officer (T.2.a), County Hall, London, S.E.1. June 18.

Obituary

MR. FRANK W. GOWER, of Amesbury Road, Moseley, managing director of the Birmingham Aluminium Casting Co., Ltd., Smethwick, on May 13, aged 44.

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Patent Literature

The following information is prepared from published Patent Specifications and from the Illustrated Official Journal (Patents) by permission of the Controller to H.M. Stationery Office. Printed copies of full Patent Specifications accepted may be obtained from the Patent Office, 25, Southampton Buildings, London, W.C.2, at 1s. each.

Abstracts of Complete Specifications

268,890. **ALKYL FORMATES, MANUFACTURE AND PRODUCTION OF.** I. Y. Johnson, London. From I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. Application date, January 11, 1926.

Alkyl formates are obtained by treating alcohols with gases containing carbon monoxide under pressure in the presence of catalysts. The gases are previously purified from moisture, carbon monoxide, sulphur compounds, and iron carbonyl. The gases are introduced into the alcohol in the form of very fine bubbles, or the alcohol is sprayed into the gas. The two are preferably passed in counter-current through a column containing perforated shelves, and the alkyl formate is continuously withdrawn at the bottom. The gas is cooled before releasing the pressure so that any alcohol and formate are condensed and returned. The catalyst may be a metal alcoholate. The process may be combined with other reactions in which the carbon monoxide in industrial gases is an undesirable admixture. Thus water gas freed from carbon dioxide and containing 40 per cent. of carbon monoxide is treated as above until 20 per cent. of carbon monoxide remains. The gas is then passed at a higher temperature over a suitable catalyst to obtain methanol.

268,891. **ANTHRAQUINONE INTERMEDIATES, PRODUCTION OF.** British Dyestuffs Corporation, Ltd., 70, Spring Gardens, Manchester, and W. W. Tatum, Crumpsall Vale Chemical Works, Blackley, Manchester. Application date, January 11, 1926.

It is known that the leuco derivatives of quinizarine, 1:4-amino-hydroxyanthraquinone, etc., can be amidated by means of alcoholic solutions of ammonia or methylamine and that the leuco sulphonic acids of the above substances can be amidated by aqueous solutions of ammonia or methylamine. It is now found that quinizarine or aminohydroxy-anthraquinones need not be first reduced, but may be amidated and reduced at the same time by warming them with aqueous solutions of ammonia or primary or secondary aliphatic amines in the presence of a reducing agent such as sodium hydrosulphite. Examples are given of the direct preparation of leuco 1:4-diamino-anthraquinone from quinizarine, the direct conversion of 1:4-amino-hydroxy-anthraquinone to leuco dimethyl-diamino-anthraquinone, the methyl-amidation of diamino-anthrarin or diamino-chrysazin, and the methyl-amidation of alizarine bordeaux.

268,980. **SOFT SOAP, MANUFACTURE OF.** L. G. Leffer, Kapellen, near Neuss, Rhineland, Germany, and Naamloze Venootschap Internationale Oep Company, 58B, Anna Paulownastraat s'Gravenhage, Holland. Application date, May 13, 1926.

The process is for the manufacture of soft soap, which is neutral and also stable in regard to temperature, so that the same process may be employed at different seasons. The invention consists in completely saponifying under pressure, oils and fats, or their fatty acids or resins with potassium hydroxide but without carbonate. The soap is produced without further treatment, and oils such as coconut and palm kernel oil which are not usually regarded as suitable may be employed. In an example, a mixture of coconut oil, palm kernel oil, rape seed oil, and linseed oil is saponified with potassium hydroxide solution of 16° Bé. in an autoclave at a temperature of 130° C., and pressure of three atmospheres, and saponification is completed in about one hour. The setting point may be influenced by hydrocarbons such as benzene, petroleum, spindle oil, or paraffin oil in the proportion of 0.5 to 2 per cent. Oils and fats containing unsaponifiable matter may be added to the primary substances in the proportion of 5 to 20 per cent.

268,998. **ELECTROLYSIS OF WATER, APPARATUS FOR.** L. Casale, 9, Via del Parlamento, Rome. Application date, June 1, 1926.

The active faces of the electrodes are made of wire net or perforated sheet metal and diaphragms are placed between

electrodes of opposite polarity. The diaphragms are carried by a support near the top and having two diverging extensions to divert the rising gas bubbles into receiving bells. The gases are conveyed away by tubes which pass under the receiving bells up into that part which is permanently filled with gas, so that the bell is not perforated.

269,028. **CHROMIC CHLORIDE, MANUFACTURE OF.** J. Y. Johnson, London. From I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. Application date, July 26, 1926.

Anhydrous chromic chloride can be obtained on a large scale by treating ferro-chromium in the form of lumps with gases containing chlorine in such a manner that when the reaction is started it is maintained by the heat developed. The reaction is effected in a revolving furnace of metal lined internally with diatomaceous earth, and then with a lining of fireclay, quartz, or other material resistant to chlorine at high temperatures. The temperature is controlled by varying the quantity of chlorine so that the iron chloride formed is sublimed through an opening at one end of the furnace, and the chromic chloride is withdrawn at the other end. The process is applicable to iron-chromium alloys including low-grade material rich in carbon. It has been found advantageous to effect the reaction in the presence of small quantities of a reducing agent such as carbon monoxide or carbon.

269,037. **PHENOL ALDEHYDE CONDENSATION PRODUCTS, METHOD OF HARDENING UNDER HEAT AND PRESSURE.** G. M. Hick and N. G. Hick, Furze House, Brentwood, Essex. Application date, August 12, 1926.

Phenol-aldehyde condensation products are hardened by enclosing them within a pressure-tight container with a volatile liquid such as alcohol and then immersing the container in a boiling liquid by which the pressure and temperature to which the articles are subjected are determined. A saturated solution of common salt has a boiling point of 228° F., and is a suitable liquid in which to immerse the container. The volatile liquid may be replaced by a gas under pressure corresponding to the pressure generated by the alcohol.

NOTE.—Abstracts of the following specifications which are now accepted appeared in THE CHEMICAL AGE when they became open to inspection under the International Convention:—247,229 (Azogeno Soc. Anon. per la Fabbricazione Dell' Ammoniaca Sintetica E. Prodotti Derivati and C. Toniolo), relating to concentration of ammonium nitrate solutions, see Vol. XIV, p. 386; 251,267 (I. G. Farbenindustrie Akt.-Ges.), relating to manufacture of basic chromium salts, see Vol. XV, p. 59; 265,141 (Oesterreichische Chemische Werke Ges.), relating to electrolytic preparation of persulphuric acid from sulphuric acid, see Vol. XVI, p. 361.

International Specifications not yet Accepted

266,729. **REDUCING CARBON DIOXIDE TO CARBON MONOXIDE.** F. M. Wiberg, Falun, Sweden. International Convention date, February 27, 1926.

Gases containing carbon dioxide are passed through carbonaceous material heated by burning in air or oxygen which may be supplied alternately with the gases, or simultaneously. Any remaining carbon dioxide is reduced by bringing into contact with electrically heated carbonaceous material.

266,732. **VULCANISING RUBBER.** Soc. Italiana Pirelli, 21, Via Fabio Filzi, Milan, Italy. International Convention date, February 24, 1926.

Salts of potassium or rubidium, particularly the salts of monobasic fatty acids, such as acetic, butyric, valeric, palmitic, stearic acids, are employed as vulcanisation accelerators. Phenylacetates, benzoates, and succinates are less powerful. The action is increased by the presence of zinc oxide.

266,735 and 266,744. **SODIUM NITRATE.** I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention dates, February 24 and February 25, 1926.

266,735. Crude sodium nitrate is subjected to prolonged

treatment at 15°–30° C. with such quantities of water that the sodium nitrate is almost completely dissolved, but a large proportion of the sodium chloride and sodium sulphate remain in the residue. The solution obtained is employed hot for treating a fresh batch of crude nitrate, the solution finally obtained being cooled to crystallise the sodium nitrate. The liquor may then be diluted and employed for the cold leaching operation. The residue from the warm leaching operation may subsequently be subjected to cold leaching. The amount of water used for the cold leaching should usually be less than the weight of the soluble constituents of the nitrate.

266,744. Crude sodium nitrate is heated in a current of gas such as air, carbon dioxide, or steam to liberate oxides of nitrogen which may be converted into nitric acid or nitrates. An externally heated furnace may be used, and acid silicates may be present, and may be obtained from the strata above and below the nitrate deposit.

266,746. EMULSIONS, CLEANSING COMPOSITIONS. Chemische Fabrik Pott and Co., 39, Priessnitzstrasse, Dresden, Germany. International Convention date, February 25, 1926.

Aromatic or aliphatic alcohols insoluble or slightly soluble in water, such as benzyl alcohol, butyl alcohol, are treated, with or without hydrocarbons, with fatty acids, sulpho-fatty acids, naphthenic acids, aromatic or hydroaromatic sulphonic acids or their derivatives or alkali salts. The products are emulsifying agents for fats, hydrocarbons, waxes, etc., and are useful as cleansing, washing, stain removing, and wetting agents; several examples are given.

266,752. UREA-FORMALDEHYDE CONDENSATION PRODUCTS. I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, February 27, 1926.

Condensation products of urea or thiourea with formaldehyde are obtained by heating methylol compounds of urea in alcohols with the aid of an acid condensing agent. The methylol compounds are obtained from urea, thiourea, N-methylurea, and N-methyl-thiourea by alkaline condensation with formaldehyde. Condensing agents employed include alcoholic hydrochloric acid, formic acid, acetic acid, sulphuric acid, monomethyl ester. The condensation is stopped before high molecular colloidal compounds are formed by neutralising the condensing agent. The crystalline products can be further condensed at higher temperatures, in the fused state except in the case of dimethylolurea. Additions such as phenols, colophony, casein, and yeast may be present. Several examples are given of the production of solid bodies and lacquers.

267,079. LIQUID FUELS. Continentale Akt.-Ges. für Chemie, 59, Augsburgerstrasse, Berlin. International Convention date, March 8, 1926.

Lead nitrate, copper nitrate, metallic phenates, cresolates, and carbonates, bismuth triphenyl, or ammonium naphthenate may be added in the proportion of about 0.5 per cent. to motor spirit to reduce knocking.

267,121. DYES. Compagnie Nationale de Matières Colorantes et Manufactures de Produits Chimiques du Nord Reunies, Etablissements Kuhlmann, 11, Rue de la Baume, Paris. International Convention date, March 5, 1926.

3 : 9-dibenzoyl-perylene is oxidised with manganic sulphate in sulphuric acid at –10° to –15° C. to obtain a vat dyestuff similar to isoviolanthrone. If ordinary temperatures are employed, hydroxylated vat dyestuffs are obtained which are not fast unless acylated or etherified. The nature of the products depends also on the presence or absence of boric acid and the time of oxidation. Examples are given.

267,132. ALKYLATED CYCLIC ORGANIC COMPOUNDS. I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, March 3, 1926.

Carbocyclic and heterocyclic compounds are alkylated aralkylated, or cycloalkylated in the nucleus by treating with acid sulphuric esters of alcohols having three or more carbon atoms in the molecule. Benzene, toluene, xylene, naphthalene, anthracene, phenols, naphthols, pyridine, and quinoline may be treated in this manner. Thus, benzene is mixed with the acid sulphuric ester from isopropyl alcohol and chlor-sulphonic acid, sulphuric acid is added, and the mixture warmed till the product is soluble in water. Other examples are given.

267,155. OLEFINES AND DERIVATIVES. I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, March 8, 1926. Addition to 265,234.

Specification 265,234 (see THE CHEMICAL AGE, Vol. XVI, p. 381) describes the incomplete combustion of gaseous hydrocarbons with gases containing above 50 per cent. of oxygen, and this process is now applied to tars, petroleum residues, and bitumen. Olefines are obtained, the yield being increased if water is also present. The resulting gas may be used for the production of ethylene glycol, higher alcohols, or ethylene chloride, or may be passed over pumice, phosphates, heavy metals, and carbonates of alkaline earth metals, magnesium, or beryllium to obtain benzene. Thus, brown coal tar is heated to 250° C. and passed with oxygen through a porcelain tube containing refractory material heated to 800° C. The products include 20 per cent. of ethylene, propylene, and butylene, and the tarry residue may be used again.

267,162. DYES. Soc. of Chemical Industry in Basle, Switzerland. International Convention date, March 8, 1926.

Trisazo dyes are obtained by coupling a diazo compound such as aniline, naphthylamine, dehydrothio-toluidine, and their homologues and nuclear substitution products with a diazotisable second component free from hydroxyl groups such as aniline, cresidine, α -naphthylamine and their homologues and substitution products, and further diazotising the product and coupling with a meta compound of the benzene series such as resorcinol, *m*-phenylene-diamine, *m*-aminophenol and their homologues and substitution products, and causing a diazo compound to act on the disazo dyestuff thus produced; in place of the last coupling, a monoazo dyestuff from a meta compound of the benzene series and a diazo compound may be used. As an example of the process, the monoazo dyestuff from sulphanilic acid and Cleve's acid is diazotised, coupled with resorcinol, and the disazo dyestuff thus produced is coupled with diazotised aniline. Other examples are given.

267,163-4. ANTHRAQUINONE DERIVATIVES. I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, March 8, 1926.

267,163. Anthraquinone-1 : 2-isoxazoles (see Specification 147,001, THE CHEMICAL AGE, Vol. III, p. 382) are treated with reducing agents such as sodium hydrosulphite in ammoniacal solution, sodium bisulphite, ferrous sulphate in acid solution, and aniline sulphate to obtain *o*-amino-anthraquinone-aldehydes and ketones. Examples are given.

267,164. The anthraquinone-1 : 2-isoxazoles obtained as described in Specification 147,001 are treated with saponifying agents such as dilute alkali or milk of lime, or sodium carbonate to obtain 1-aminoanthraquinone-2-carboxylic acids. Examples are given.

267,165. CRACKING ORGANIC COMPOUNDS. I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, March 8, 1926.

Coal is carbonised and the gases are subjected to the action of catalysts at high temperature. Reducing gases or water may be added, and contact poisons may be eliminated. Suitable catalysts are oxides of iron, aluminium, magnesium, and vanadium. The gases treated are aromatic, hydroaromatic, or heterocyclic compounds such as naphthalene, higher phenols, and carbazol, and the products include liquor ammonia, benzene and its lower homologues.

267,491. METAL HYDROXIDES FROM FERRUGINOUS SALT SOLUTIONS. O. Lederer, Stanczak and H. Kassler, 5, Palackeho tr., Prague. International Convention date, March 9, 1926.

Metal salt solutions containing iron are treated with an alkali hydroxide or carbonate, ammonia, or lime, in the presence of hydrogen sulphide, or with ammonium sulphide. The iron remains in solution as sulphide, and a basic salt of the metal free from iron is precipitated, from which the hydroxide may be obtained by hydrolysis. Aluminium, chromium, or titanium sulphate may be treated in this manner.

267,535. HYDROGEN. I. G. Farbenindustrie Akt.-Ges., Frankfurt-on-Main, Germany. International Convention date, March 10, 1926.

Methane, ethane, ethylene, or benzene is treated with steam in the presence of iron, nickel, or cobalt, activated by the addition of metals whose oxides are reducible with difficulty, such as chromium, vanadium, and compounds of alkali,

alkaline earth, and earth metals. A temperature of 300°-650° C. may be employed, and the hydrocarbons are converted into carbon dioxide and hydrogen, without formation of carbon monoxide. The carbon dioxide is removed, and the hydrogen employed for the synthesis of ammonia or methyl alcohol, or for hydrogenation of coal, tars, oils, etc.

LATEST NOTIFICATIONS.

- 270,637. Chemicals for colouring fabrics. Kritchevsky, W., and Prutsman, H. C. May 5, 1926.
- 270,651. Manufacture of benzoic acid esters. Canadian Electro Products Co., Ltd. May 4, 1926.
- 270,656. Processes and apparatus for the continuous manufacture of cellulose acetate. Soc. Chimique des Usines du Rhone. May 10, 1926.
- 270,661. Chambers for the manufacture of sulphuric acid. Colombo, M. May 6, 1926.
- 270,698. Conversion of coaly materials into valuable liquid products. I. G. Farbenindustrie Akt.-Ges. May 5, 1926.
- 270,702. Manufacture and production of pulverulent fuel for internal-combustion engines. I. G. Farbenindustrie Akt.-Ges. May 7, 1926.
- 270,703. Pulverulent fuels for use in operating internal-combustion engines. I. G. Farbenindustrie Akt.-Ges. May 7, 1926.
- 270,704. Conversion of hydrocarbons of high boiling-point into others of lower boiling-point. I. G. Farbenindustrie Akt.-Ges. May 7, 1926.
- 270,705. Process for the manufacture and production of hydrocarbons. I. G. Farbenindustrie Akt.-Ges. May 10, 1926.
- 270,711. Process for the production of chromyl chloride. Permutit Akt.-Ges. May 5, 1926.
- 270,729. Manufacture of new derivatives of aminometal-mercaptosulphonic acids and salts thereof. Chemische Fabrik auf Actien (vorm. E. Schering). May 5, 1926.
- 270,750. Manufacture and production of colour lakes. I. G. Farbenindustrie Akt.-Ges. May 10, 1926.
- 270,758. Dyeing apparatus. Böhm, V. May 7, 1926.
- 270,763. Manufacture of highly porous coherent lead aggregates. I. G. Farbenindustrie Akt.-Ges. May 7, 1926.

Specifications Accepted with Date of Application

- 245,165. Condensation products of the anthraquinone series, Manufacture of. I. G. Farbenindustrie Akt.-Ges. December 27, 1924. Addition to 205,502.
- 254,758. Azo dyestuffs for dyeing cellulose esters, especially cellulose acetate, Process for the production of. Chemical Works (formerly Sandoz). January 6, 1925.
- 246,490. Illuminating constituents of coal gas, Cracking or fixing of. Kohlenveredlung Ges. January 23, 1925.
- 247,177. Higher alcohols, Method for the synthetic production of. G. Patart. February 7, 1925.
- 247,932. Methanol and liquid hydrocarbons, Method for simultaneously synthesising. G. Patart. February 23, 1925.
- 257,906. Removal of benzene from gases containing the same. I. G. Farbenindustrie Akt.-Ges. September 1, 1925.
- 258,242. Chromium plating. Metropolitan-Vickers Electrical Co., Ltd. September 12, 1925.
- 258,243. Separating hafnium and zirconium, Process of. Naamlooze Vennootschap Philips' Gloeilampenfabrieken. September 12, 1925. Addition to 235,217.
- 260,550. Polymerised vinyl-chloride modification and process of making the same. L. A. Van Dyk. July 26, 1926.
- 260,575. Linings for vessels which are to resist acids, Manufacture of. I. G. Farbenindustrie Akt.-Ges. October 27, 1925. Addition to 258,616.
- 262,382. Dye effluents, Process of treating. Darco Sales Corporation. December 3, 1925.
- 264,480. Nitrate of lime, Process for the production of granulated dust-free. Norsk Hydro-Elektrisk Kvaelfabrikfabriek. January 14, 1926.
- 264,510. Copper sulphate, Manufacture of. L. Meyer and M. Meyer. January 13, 1926.
- 264,823. Sodium aluminate, Production of. Aluminum Co. of America. January 21, 1926.
- 269,749. Metallic salts, Process and electrolytic methods for separating and recovering the constituents of—in a state of fusion for use in the treatment of ores or chemical or metallurgical products. E. A. Ashcroft. November 27, 1925.
- 269,959. Shaft furnaces for reducing iron ores. Y. Murakami. January 19, 1926.
- 269,961. Absorbent carbon, Manufacture of. E. Urbain. January 20, 1926.
- 269,970-1. Sulphurised derivatives of phenols and naphthols and their application as mordants, Manufacture of. Fabrik van Chemische Producten and E. Kraus. January 26, 1926.
- 269,993. Peat, Treatment of. Allgemeine Kommerzges Akt.-Ges. and A. Mannesmann. February 1, 1926.
- 270,009. Water gas and coal gas from bituminous fuel, Production of—with the simultaneous recovery of ammonia and tar by-products. Power Gas Corporation, Ltd., and N. E. Rambush. February 3, 1926.
- 270,040. Active silica, Manufacture and production of. J. Y. Johnson. (I. G. Farbenindustrie Akt.-Ges.) February 26, 1926.
- 270,060. Refining calcium and magnesium and their alloys. A. E. White. (American Magnesium Corporation.) March 24, 1926.
- 270,066. Separating the solid and liquid constituents of a material from one another, Method and apparatus for. Allgemeine Kommerzges Akt.-Ges. and A. Mannesmann. March 30, 1926. Addition to 269,993.
- 270,091. Unsymmetrical arylarseno-compounds, Manufacture of. G. Newbery, F. J. Paxon, and May and Baker, Ltd. May 7, 1926.
- 270,099. Separation or recovery of gases and vapours by solid absorbents, Processes for. A. Godel. May 28, 1926.
- 270,108. Pulp thickeners or filters. R. Haddan. (Oliver Continuous Filter Co.) June 11, 1926.
- 270,143. Chromium ores, Process for extracting. Zahn and Co., bau Chemischer Fabriken Ges., and D. Wickop. August 30, 1926.

Applications for Patents

- Bakerlite Corporation and Marks, E. C. R. Condensation products. 12,914. May 13.
- Barrett, F. L., Bleachers' Association, Ltd., Kershaw, W., Sutton, G. D., and Whitelegg, C. J. Treatment of cellulosic materials. 12,345, 12,346, 12,347, 12,348. May 9.
- Böhm, V. Dyeing apparatus. 12,437. May 9. (Austria, May 7, 1926.)
- Bourgognion, J. W. M., and Philips, C. L. Treatment of water 12,542. May 10. (Holland, May 11, 1926.)
- Carpmael, W., and I. G. Farbenindustrie Akt.-Ges. Manufacture of derivatives, etc. of anthraquinone. 12,808. May 12.
- Carpmael, W., and I. G. Farbenindustrie Akt.-Ges. Manufacture of vat dyestuffs. 12,809. May 12.
- Carpmael, W., and I. G. Farbenindustrie Akt.-Ges. Manufacture of vat dyestuffs. 13,024. May 14.
- Consortium für Elektrochemische Industrie Ges. Manufacture of butyric aldehyde. 12,907. May 13. (Germany, May 15, 1926.)
- Dreaper, W. P. Artificial silk, etc. 12,591. May 11.
- Dreaper, W. P. Manufacture of cellulose esters. 12,713. May 12.
- Dreaper, W. P. Artificial cavity filaments, etc. 12,868. May 13.
- Fairlie, J., and Fairlie and Co., Ltd., H. C. Manufacture of chromates of potash, etc. 12,783. May 12.
- I. G. Farbenindustrie Akt.-Ges. and Imray, O. Y. Manufacture of mixed esters of cellulose. 12,794. May 12.
- I. G. Farbenindustrie Akt.-Ges. Transforming hydrocarbons. 12,402. May 9. (Germany, May 20, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Production of hydrocarbons. 12,403. May 9. (Germany, May 22, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Extraction of carbon dioxide from gaseous mixtures. 12,404. May 9. (Germany, May 28, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Gelatine for light-sensitive silver salts emulsions. 12,457. May 9. (Germany, June 16, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Manufacture of highly-porous coherent lead aggregates. 12,459. May 9. (Germany, May 7, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Production of azo dyestuffs. 12,668. May 11. (Germany, May 11, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Production of valuable liquid, etc., from coal, etc. 12,680, 12,681, 12,682, 12,683, 12,684, 12,685. May 11. (February 11, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Production of chromates. 12,772. May 12. (Germany, July 1, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Production of hydrocarbons from natural oils, etc. 12,777. May 12. (February 26, 1926.)
- I. G. Farbenindustrie Akt.-Ges. Production of hydrocarbons from natural oil, etc. 12,778. May 12. (March 8, 1926.)
- Lilienfeld, L. Treating vegetable fibrous material. 12,667. May 11.
- Michel, G. Metallurgy of magnesium, etc. 12,665. May 11. (France, May 11, 1926.)
- Nobel's Explosives Co., Ltd. Manufacture of cellulose compounds. 12,664. May 11.
- Nobel's Explosives Co., Ltd., and Wilson, W. C. Cellulose compounds. 13,022. May 14.
- Siemens and Halske Akt.-Ges. Copper-beryllium alloys. 12,454. May 9. (Germany, May 21, 1926.)
- Steward, C. O. M. Process for dehydration of water-gas tar emulsions. 12,789. May 12.
- Titan Co. Aktieselskabet. Manufacture of titanium compounds. 12,656. May 12. (Norway, May 12, 1926.)
- Traill, D. Manufacture of cellulose compounds. 12,664. May 11.
- Traill, D. Cellulose compounds. 13,022. May 14.

Weekly Prices of British Chemical Products

The prices and comments given below respecting British chemical products are based on direct information supplied by the British manufacturers concerned. Unless otherwise qualified, the figures quoted apply to fair quantities, net and naked at makers' works.

General Heavy Chemicals

ACID ACETIC, 40% TECH.—£19 per ton.
 ACID BORIC, COMMERCIAL.—Crystal, £34 per ton; powder, £36 per ton.
 ACID HYDROCHLORIC.—3s. 9d. to 6s. per carboy d/d, according to purity, strength, and locality.
 ACID NITRIC, 80° Tw.—£21 10s. to £27 per ton, makers' works, according to district and quality.
 ACID SULPHURIC.—Average National prices f.o.r. makers' works, with slight variations up and down owing to local considerations: 140° Tw., Crude Acid, 60s. per ton. 168° Tw., Arsenical, £5 10s. per ton. 168° Tw., Non-arsenical, £6 15s. per ton.
 AMMONIA ALKALI.—£6 15s. per ton f.o.r. Special terms for contracts.
 BISULPHITE OF LIME.—£7 10s. per ton, packages extra, returnable.
 BLEACHING POWDER.—Spot, £9 10s. per ton d/d; Contract, £8 10s. per ton d/d, 4-ton lots.
 BORAX, COMMERCIAL.—Crystals, £19 10s. to £20 per ton; granulated, £19 per ton; powder, £21 per ton. (Packed in 2-cwt. bags, carriage paid any station in Great Britain.)
 CALCIUM CHLORIDE (SOLID).—£5 to £5 5s. per ton d/d carr. paid.
 COPPER SULPHATE.—£25 to £25 10s. per ton.
 METHYLATED SPIRIT 61 O.P.—Industrial, 2s. 5d. to 2s. 10d. per gall.; pyridinised industrial, 2s. 7d. to 3s. per gall.; mineralised, 3s. 6d. to 3s. 10d. per gall.; 64 O.P., 1d. extra in all cases; prices according to quantity.
 NICKEL SULPHATE.—£38 per ton d/d.
 NICKEL AMMONIA SULPHATE.—£38 per ton d/d.
 POTASH CAUSTIC.—£30 to £33 per ton.
 POTASSIUM BICHROMATE.—4½d. per lb.
 POTASSIUM CHLORATE.—3½d. per lb., ex wharf, London, in cwt. kegs.
 SALAMMONIAC.—£45 to £50 per ton d/d. Chloride of ammonia, £37 to £45 per ton, carr. paid.
 SALT CAKE.—£3 15s. to £4 per ton d/d. In bulk.
 SODA CAUSTIC, SOLID.—Spot lots delivered, £15 2s. 6d. to £18 per ton, according to strength; 20s. less for contracts.
 SODA CRYSTALS.—£5 to £5 5s. per ton, ex railway depots or ports.
 SODIUM ACETATE 97/98%.—£21 per ton.
 SODIUM BICARBONATE.—£10 10s. per ton, carr. paid.
 SODIUM BICHROMATE.—3½d. per lb.
 SODIUM BISULPHITE POWDER, 60/62%.—£17 10s. per ton for home market, 1-cwt. drums included.
 SODIUM CHLORATE.—2½d. per lb.
 SODIUM NITRITE, 100% BASIS.—£27 per ton d/d.
 SODIUM PHOSPHATE.—£14 per ton, f.o.r. London, casks free.
 SODIUM SULPHATE (GLAUBER SALTS).—£3 12s. 6d. per ton.
 SODIUM SULPHIDE CONC. SOLID, 60/65.—£13 5s. per ton d/d. Contract, £13. Carr. paid.
 SODIUM SULPHIDE CRYSTALS.—Spot, £8 12s. 6d. per ton d/d. Contract, £8 10s. Carr. paid.
 SODIUM SULPHITE, PEA CRYSTALS.—£14 per ton f.o.r. London, 1-cwt. kegs included.

Coal Tar Products

ACID CARBOLIC CRYSTALS.—8½d. to 9d. per lb. Crude 60's, 2s. 6d. to 2s. 8d. per gall.
 ACID CRESYLIC 99/100.—2s. 8d. to 2s. 9d. per gall. Steady. 97/99.—2s. 1½d. to 2s. 3d. per gall. Pale, 95%, 2s. to 2s. 1½d. per gall. Dark, 1s. 9d. to 1s. 10d. per gall.
 ANTHRACENE.—A quality, 2½d. to 3d. per unit. 40%, 3d. per unit.
 ANTHRACENE OIL, STRAINED.—8d. to 8½d. per gall. Unstrained, 7½d. to 8d. per gall.; both according to gravity.
 BENZOLE.—Crude 65's, 1s. 0½d. to 1s. 1½d. per gall., ex works in tank wagons. Standard Motor, 1s. 9d. to 2s. 2d. per gall., ex works in tank wagons. Pure, 1s. 8d. to 2s. 6d. per gall., ex works in tank wagons.
 TOLUOLE.—90%, 1s. 9d. to 2s. 0½d. per gall. Firm. Pure, 1s. 10d. to 2s. 3½d. per gall.
 XYLOL.—2s. to 2s. 4d. per gall. Pure, 3s. per gall.
 CREOSOTE.—Cresylic, 20/24%, 10½d. per gall. Standard specification, 6½d. to 9d.; middle oil, 7½d. to 8d. per gall. Heavy, 8½d. to 9d. per gall. Salty, 7d. per gall. less 1½%.
 NAPHTHA.—Crude, 8d. to 9d. per gall. according to quality. Solvent 90/160, 1s. 10d. to 1s. 11d. per gall. Solvent 95/160, 1s. 6d. to 1s. 7d. per gall. Solvent 90/190, 1s. 1½d. to 1s. 4d. per gall.
 NAPHTHALENE CRUDE.—Drained Creosote Salts, £7 10s. per ton. Whizzed or hot pressed, £8 10s. to £9 per ton.
 NAPHTHALENE.—Crystals, £11 10s. to £13 10s. per ton. Quiet. Flaked, £12 10s. per ton, according to districts.
 PITCH.—Medium soft, 70s. to 80s. per ton, according to district; nominal.
 PYRIDINE.—90/140, 7s. 6d. to 13s. per gall. Nominal. 90/180, 4s. 6d. to 5s. per gall. Heavy, 5s. to 8s. per gall.

Intermediates and Dyes

In the following list of Intermediates delivered prices include packages except where otherwise stated:
 ACID AMIDONAPHTHOL DISULPHO (1-8-2-4).—10s. 9d. per lb.
 ACID ANTHRANILIC.—6s. per lb. 100%.
 ACID BENZOIC.—1s. 9d. per lb.
 ACID GAMMA.—4s. 9d. per lb.
 ACID H.—3s. 3d. per lb. 100% basis d/d.
 ACID NAPHTHIONIC.—1s. 6d. per lb. 100% basis d/d.
 ACID NEVILLE AND WINTHER.—4s. 9d. per lb. 100% basis d/d.
 ACID SULPHANILIC.—9d. per lb. 100% basis d/d.
 ANILINE OIL.—7d. per lb. naked at works.
 ANILINE SALTS.—7d. per lb. naked at works.
 BENZALDEHYDE.—2s. 3d. per lb.
 BENZIDINE BASE.—3s. 3d. per lb. 100% basis d/d.
 BENZOIC ACID.—1s. 8½d. per lb.
 o-CRESOL 29/31° C.—4d. per lb. Fair inquiry.
 m-CRESOL 98/100%.—2s. 8½d. per lb. Only limited inquiry.
 p-CRESOL 32/34° C.—2s. 8½d. per lb. Only limited inquiry.
 DICHLORANILINE.—2s. 3d. per lb.
 DIMETHYLANILINE.—2s. per lb. d/d. Drums extra.
 DINITROBENZENE.—9d. per lb. naked at works. £75 per ton.
 DINITROCHLOROBENZENE.—£84 per ton d/d.
 DINITROTOLUENE.—48/50° C. 8d. per lb. naked at works. 66/68° C. 9d. per lb. naked at works.
 DIPHENYLAMINE.—2s. 10d. per lb. d/d.
 a-NAPHTHOL.—2s. per lb. d/d.
 B-NAPHTHOL.—11d. to 1s. per lb. d/d.
 a-NAPHTHYLAMINE.—1s. 3d. per lb. d/d.
 B-NAPHTHYLAMINE.—3s. per lb. d/d.
 o-NITRANILINE.—5s. 9d. per lb.
 m-NITRANILINE.—3s. per lb. d/d.
 p-NITRANILINE.—1s. 9d. per lb. d/d.
 NITROBENZENE.—6d. per lb. naked at works.
 NITRONAPHTHALENE.—1s. 3d. per lb. d/d.
 R. SALT.—2s. 3d. per lb. 100% basis d/d.
 SODIUM NAPHTHIONATE.—1s. 8½d. per lb. 100% basis d/d.
 o-TOLUIDINE.—7½d. per lb. naked at works.
 p-TOLUIDINE.—2s. 2d. per lb. naked at works.
 m-XYLIDINE ACETATE.—2s. 11d. per lb. 100%.

Wood Distillation Products

ACETATE OF LIME.—Brown, £8 10s. to £9 5s. per ton. Grey, £15 10s. per ton. Liquor, 9d. per gall. 32° Tw.
 CHARCOAL.—£6 15s. to £10 per ton, according to grade and locality.
 IRON LIQUOR.—1s. 3d. per gall. 32° Tw. 1s. per gall. 24° Tw.
 RED LIQUOR.—9d. to 10d. per gall. 16° Tw.
 WOOD CREOSOTE.—1s. 9d. per gall. Unrefined.
 WOOD NAPHTHA, MISCIBLE.—3s. 9d. to 4s. per gall., 60% O.P. Solvent, 3s. 11d. to 4s. 3d. per gall. 40% O.P.
 WOOD TAR.—£4 to £5 10s. per ton and upwards, according to grade.
 BROWN SUGAR OF LEAD.—£40 15s. to £41 10s. per ton.

Rubber Chemicals

ANTIMONY SULPHIDE.—Golden, 6½d. to 1s. 5½d. per lb., according to quality; Crimson, 1s. 4d. to 1s. 6d. per lb., according to quality.
 ARSENIC SULPHIDE, YELLOW.—1s. 9d. per lb.
 BARYTES.—£3 10s. to £6 15s. per ton, according to quality.
 CADMIUM SULPHIDE.—2s. 6d. to 2s. 9d. per lb.
 CARBON BISULPHIDE.—£20 to £25 per ton, according to quantity.
 CARBON BLACK.—5½d. per lb., ex wharf.
 CARBON TETRACHLORIDE.—£45 to £50 per ton, according to quantity, drums extra.
 CHROMIUM OXIDE, GREEN.—1s. 1d. per lb.
 DIPHENYLGUANIDINE.—3s. 9d. per lb.
 INDIARUBBER SUBSTITUTES, WHITE AND DARK.—5½d. to 6½d. per lb.
 LAMP BLACK.—£35 per ton, barrels free.
 LEAD HYPOSULPHITE.—9d. per lb.
 LITHOPONE, 30%.—£22 10s. per ton.
 MINERAL RUBBER "RUBPRON".—£13 12s. 6d. per ton, f.o.r. London.
 SULPHUR.—£9 to £11 per ton, according to quality.
 SULPHUR CHLORIDE.—4d. to 7d. per lb., carboys extra.
 SULPHUR PRECIP. B.P.—£47 10s. to £50 per ton.
 THIOCARBAMIDE.—2s. 6d. to 2s. 9d. per lb. carriage paid.
 THIOCARBANILIDE.—2s. 1d. to 2s. 3d. per lb.
 VERMILION, PALE OR DEEP.—6s. to 6s. 3d. per lb.
 ZINC SULPHIDE.—1s. per lb.

Pharmaceutical and Photographic Chemicals

ACID, ACETIC, PURE, 80%.—£39 per ton ex wharf London in glass containers.

ACID, ACETYL SALICYLIC.—2s. 5d. to 2s. 6d. per lb.

ACID, BENZOIC B.P.—2s. to 2s. 3d. per lb., according to quantity. Solely ex Gum, 1s. 3d. per oz.; 500 oz. lots, 1s. per oz.

ACID, BORIC B.P.—Crystal, £41 per ton; powder, £45 per ton. Carriage paid any station in Great Britain, in ton lots.

ACID, CAMPHORIC.—19s. to 21s. per lb.

ACID, CITRIC.—1s. 7d. per lb., less 5%. Advancing.

ACID, GALLIC.—2s. 8d. per lb. for pure crystal, in cwt. lots.

ACID, PYROGALLIC, CRYSTALS.—7s. 3d. per lb. Resublimed, 8s. 3d. per lb.

ACID, SALICYLIC, B.P.—1s. 3½d. to 1s. 4d. per lb. Technical.—11½d. to 1s. per lb.

ACID, TANNIC B.P.—2s. 9d. to 2s. 11d. per lb.

ACID, TARTARIC.—1s. 3½d. per lb., less 5%. Firm market.

AMIDOL.—9s. per lb., d/d.

ACETANILIDE.—1s. 6d. to 1s. 8d. per lb. for quantities.

AMIDOPYRIN.—8s. 6d. per lb.

AMMONIUM BENZOATE.—3s. 3d. to 3s. 9d. per lb., according to quantity.

AMMONIUM CARBONATE B.P.—£37 per ton. Powder, £39 per ton in 5 cwt. casks. Resublimed; lump, 1s. per lb.; powder, 1s. 3d. per lb.

ATROPINE SULPHATE.—11s. per oz. for English make.

BARBITONE.—6s. 6d. per lb.

BENZONAPHTHOL.—3s. 3d. per lb. spot.

BISMUTH CARBONATE.—9s. 9d. to 10s. per lb.

BISMUTH CITRATE.—9s. 6d. to 9s. 9d. per lb.

BISMUTH SALICYLATE.—8s. 9d. to 9s. per lb.

BISMUTH SUBNITRATE.—7s. 9d. to 8s. per lb.

BISMUTH NITRATE.—5s. 9d. to 6s. per lb.

BISMUTH OXIDE.—13s. 9d. to 14s. per lb.

BISMUTH SUBCHLORIDE.—11s. 9d. to 12s. per lb.

BISMUTH SUBGALLATE.—7s. 9d. to 8s. per lb. Extra and reduced prices for smaller and larger quantities respectively; Liqueur Bismuthi B.P. in W. Qts. 1s. 1d. per lb.; 12 W. Qts. 1s. per lb.; 36 W. Qts. 11½d. per lb.

BORAX B.P.—Crystal, £24 per ton; powder, £25 per ton. Carriage paid any station in Great Britain, in ton lots.

BROMIDES.—Potassium, 1s. 11d. to 2s. per lb.; sodium, 2s. 2d. to 2s. 3d. per lb.; ammonium, 2s. 4d. to 2s. 5d. per lb., all spot.

CALCIUM LACTATE.—1s. 3½d. to 1s. 4½d.

CHLORAL HYDRATE.—3s. 2d. to 3s. 5d. per lb., duty paid.

CHLOROFORM.—2s. 3d. to 2s. 7½d. per lb., according to quantity.

CREOSOTE CARBONATE.—6s. per lb.

ETHER METH.—1s. 1d. to 1s. 11½d. per lb., according to sp. gr. and quantity. Ether purif. (Aether B.P., 1914), 2s. 3d. to 2s. 4d., according to quantity.

FORMALDEHYDE.—£39 per ton, in barrels ex wharf.

GUAIACOL CARBONATE.—5s. per lb.

HEXAMINE.—2s. 4d. to 2s. 6d. per lb.

HOMATROPINE HYDROBROMIDE.—30s. per oz.

HYDRASTINE HYDROCHLORIDE.—English make offered at 120s. per oz.

HYDROGEN PEROXIDE (12 VOLS.).—1s. 4d. per gallon, f.o.r. makers' works, naked.

HYDROQUINONE.—4s. per lb., in cwt. lots.

HYPOPHOSPHITES.—Calcium, 3s. 6d. per lb., for 28-lb. lots; potassium, 4s. 1d. per lb.; sodium, 4s. per lb.

IRON AMMONIUM CITRATE B.P.—2s. 1d. to 2s. 4d. per lb. Green, 2s. 4d. to 2s. 9d. per lb. U.S.P., 2s. 2d. to 2s. 5d. per lb.

IRON PERCHLORIDE.—22s. per cwt., 112 lb. lots.

MAGNESIUM CARBONATE.—Light Commercial, £31 per ton net.

MAGNESIUM OXIDE.—Light commercial, £62 10s. per ton, less 2½%; Heavy Commercial, £21 per ton, less 2½%; in quantity lower; Heavy Pure, 2s. to 2s. 3d. per lb., in 1 cwt. lots.

MENTHOL.—A.B.R. recrystallised B.P., 18s. 3d. per lb. net; Synthetic, 10s. 6d. to 12s. per lb., according to quantity; Liquid (95%), 12s. per lb.; Detached Cryst., 14s. 6d. per lb.

MERCURIALS B.P.—Up to 1 cwt. lots, Red Oxide, 7s. 6d. to 7s. 7d. per lb., levig., 7s. to 7s. 1d. per lb.; Corrosive Sublimate, Lump, 5s. 9d. to 5s. 10d. per lb., Powder, 5s. 2d. to 5s. 3d. per lb.; White Precipitate, Lump, 5s. 11d. to 6s. per lb., Powder, 6s. to 6s. 1d. per lb., Extra Fine, 6s. 1d. to 6s. 2d. per lb.; Calomel, 6s. 4d. to 6s. 5d. per lb.; Yellow Oxide, 6s. 10d. to 6s. 11d. per lb.; Persulph., B.P.C., 6s. 1d. to 6s. 2d. per lb.; Sulph. nig., 5s. 10d. to 5s. 11d. per lb. Special prices for larger quantities.

METHYL SALICYLATE.—1s. 9d. per lb.

METHYL SULPHONAL.—11s. per lb.

METOL.—11s. per lb. British make.

PARAFORMALDEHYDE.—1s. 9d. per lb. for 100% powder.

PARALDEHYDE.—1s. 4d. per lb.

PHENACETIN.—3s. per lb.

PHENAZONE.—4s. 6d. per lb.

PHENOLPHTHALEIN.—6s. to 6s. 3d. per lb.

POTASSIUM BITARTRATE 99/100% (Cream of Tartar).—97s. per cwt. less 2½% for ton lots.

POTASSIUM CITRATE.—1s. 11d. to 2s. 2d. per lb.

POTASSIUM FERRICYANIDE.—1s. 9d. per lb., in cwt. lots.

POTASSIUM IODIDE.—16s. 8d. to 17s. 5d. per lb. for 1 cwt. lots.

POTASSIUM METABISULPHITE.—6d. per lb., 1-cwt. kegs included, f.o.r. London.

POTASSIUM PERMANGANATE.—B.P. crystals, 6d. per lb., spot.

QUININE SULPHATE.—2s. per oz., 1s. 8d. to 1s. 9d. for 1000 oz. lots in 100 oz. tins.

RESORCIN.—4s. per lb., spot.

SACCHARIN.—55s. per lb. Very limited inquiry.

SALOL.—2s. 4d. per lb.

SODIUM BENZOATE, B.P.—1s. 10d. to 2s. 2d. per lb.

SODIUM CITRATE, B.P.C., 1911.—1s. 8d. to 1s. 11d. per lb., B.P.C., 1923—2s. to 2s. 1d. per lb. for 1 cwt. lots. U.S.P., 1s. 11d. to 2s. 2d. per lb., according to quantity.

SODIUM FERROCYNANIDE.—4d. per lb., carriage paid.

SODIUM HYPOSULPHITE, PHOTOGRAPHIC.—£15 5s. per ton, d/d consignee's station in 1-cwt. kegs.

SODIUM NITROPRUSSIDE.—16s. per lb.

SODIUM POTASSIUM TARTRATE (ROCHELLE SALT).—90s. to 95s. per cwt. Crystals, 5s. per cwt. extra.

SODIUM SALICYLATE.—Powder, 1s. 9d. to 1s. 10d. per lb. Crystal, 1s. 10d. to 1s. 11d. per lb.

SODIUM SULPHIDE, PURE RECRYSTALLISED.—10d. to 1s. 2d. per lb.

SODIUM SULPHITE, ANHYDROUS, £27 10s. to £28 10s. per ton, according to quantity; 1-cwt. kegs included.

SULPHONAL.—7s. 6d. per lb.

TARTAR EMETIC, B.P.—Crystal or powder, 2s. 1d. to 2s. 2d. per lb.

THYMOL.—Puriss., 11s. to 12s. per lb., according to quantity. Firmer. Natural, 14s. 9d. per lb. Cheaper.

Perfumery Chemicals

ACETOPHENONE.—7s. 3d. per lb.

AUBEPINE (EX ANETHOL), 10s. 6d. per lb.

AMYL ACETATE.—2s. per lb.

AMYL BUTYRATE.—5s. 3d. per lb.

AMYL SALICYLATE.—3s. per lb.

ANETHOL (M.P. 21/22° C.).—5s. 6d. per lb.

BENZYL ACETATE FROM CHLORINE-FREE BENZYL ALCOHOL.—2s. per lb.

BENZYL ALCOHOL FREE FROM CHLORINE.—2s. per lb.

BENZALDEHYDE FREE FROM CHLORINE.—2s. 6d. per lb.

BENZYL BENZOATE.—2s. 3d. per lb.

CINNAMIC ALDEHYDE NATURAL.—17s. per lb.

COUMARIN.—10s. 6d. per lb.

CITRONELLOL.—14s. 6d. per lb.

CITRAL.—8s. 3d. per lb.

ETHYL CINNAMATE.—10s. per lb.

ETHYL PHTHALATE.—2s. 9d. per lb.

EUGENOL.—9s. per lb.

GERANIOL (PALMAROSA).—17s. 6d. per lb.

GERANIOL.—6s. 6d. to 10s. per lb.

HELIOTROPINE.—4s. 9d. per lb.

ISO EUGENOL.—13s. 6d. per lb.

LINALOL.—Ex Bois de Rose, 15s. per lb. Ex Shui Oil, 10s. 6d. per lb.

LINALYL ACETATE.—Ex Bois de Rose, 18s. per lb. Ex Shui Oil, 14s. 6d. per lb.

METHYL ANTHRANILATE.—8s. 6d. per lb.

METHYL BENZOATE.—4s. 6d. per lb.

MUSK KETONE.—35s. per lb.

MUSK XYLOL.—8s. 6d. per lb.

NEROLIN.—3s. 9d. per lb.

PHENYL ETHYL ACETATE.—10s. 6d. per lb.

PHENYL ETHYL ALCOHOL.—9s. 9d. per lb.

RHODINOL.—30s. per lb.

SAFROL.—1s. 6d. per lb.

TERPINEOL.—1s. 6d. per lb.

VANILLIN.—18s. 6d. per lb. Good demand.

Essential Oils

ALMOND OIL.—10s. 3d. per lb.

ANISE OIL.—3s. 1d. per lb.

BERGAMOT OIL.—30s. per lb.

BOURBON GERANIUM OIL.—14s. 3d. per lb.

CAMPHOR OIL.—67s. 6d. per cwt.

CANANGA OIL, JAVA.—26s. per lb.

CINNAMON OIL LEAF.—6d. per oz.

CASSIA OIL, 80/85%.—8s. 6d. per lb.

CITRONELLA OIL.—Java, 85/90%, 2s. 1d. per lb. Ceylon, pure, 1s. 10d. per lb.

CLOVE OIL.—6s. per lb.

EUCALYPTUS OIL, 70/75%.—2s. per lb.

LAVENDER OIL.—Mont Blanc, 38/40%, Esters, 21s. per lb.

LEMON OIL.—8s. 9d. per lb.

LEMONGRASS OIL.—4s. 6d. per lb.

ORANGE OIL, SWEET.—10s. 6d. per lb.

OTTO OF ROSE OIL.—Anatolian, 30s. per oz. Bulgarian, 70s. per oz.

PALMA ROSA OIL.—9s. 6d. per lb.

PEPPERMINT OIL.—Wayne County, 16s. 9d. per lb. Japanese, 8s. per lb.

PETITGRAIN OIL.—7s. 9d. per lb.

SANDALWOOD OIL.—Mysore, 26s. 6d. per lb.; 90/95%, 16s. 6d. per lb.

London Chemical Market

The following notes on the London Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. R. W. Greeff & Co., Ltd., and Messrs. Chas. Page & Co., Ltd., and may be accepted as representing these firms' independent and impartial opinions.

London, May 19, 1927.

THERE has been a fair improvement in the demand for the majority of industrial chemicals, and, with almost all products showing a firmer condition for forward delivery, larger business is expected. Export trade, although very slow for the East, is improving for the Colonies.

General Chemicals

ACETONE remains firm and in steady request. Prices range from £61 to £63 per ton, according to quantity.
 ACID ACETIC.—Unchanged and in steady request.
 ACID CITRIC is reported higher at 1s. 6d. to 1s. 7d. per lb., according to make. The demand is improving.
 ACID FORMIC.—Demand is only fair, with price firm at £46 to £49, according to quantity.
 ACID LACTIC is in quite fair demand, especially in the North. For 50% weight technical quality £43 is the unchanged figure.
 ACID OXALIC.—In good call at unchanged prices of £27 10s. to £28 10s. for ton lots.
 ACID TARTARIC.—Further advances are reported and price is now 1s. 4½d. to 1s. 6d., according to make and quantity. Most of the second-hand parcels are now absorbed. Inquiry is better.
 ALUMINA SULPHATE.—In good request and price steady at about £6 5s. for best 17/18% quality.
 AMMONIUM CHLORIDE.—Little business passing, but price unchanged at about £19 for fine white quality.
 ARSENIC.—Demand still disappointing and price easy at £18 to £20 per ton.
 BARIUM CHLORIDE.—Demand better and price firming at £8 10s. to £9 5s.
 COPPER SULPHATE.—Plenty of inquiry in the market and price extremely firm. Most makers fully sold for next few months. Price stands at about £25 for crystals good brands.
 CREAM OF TARTAR.—Again higher at £99 to £102 per ton. Inquiry fair.
 EPSOM SALTS.—Firm at £5 5s. with large export demand, which has had the effect of causing difficulty in obtaining fresh supplies for early delivery from works.
 FORMALDEHYDE is only in small request with price firm at £41 and may go slightly higher.
 LEAD ACETATE.—Buyers only operating on hand to mouth basis in consequence of reduced metal price. White quality quoted at £44, and brown £42 per ton.
 LEAD NITRATE.—Slow of sale at £38 to £39.
 METHYL ACETONE continues firm and in good demand at £60.
 METHYL ALCOHOL.—Position unchanged.
 POTASSIUM CHLORATE.—More material offering and price temporarily lower. Export inquiry is, however, improving. Spot price about 3½d. per lb.
 POTASSIUM PERMANGANATE.—Manufacturers report advanced prices and position is firm. Spot supplies of good sized needle crystals B.P. command about 8d. per lb.
 POTASSIUM PRUSSIAN continues extremely firm and in good demand. Spot prices range from 7½d. to 7¾d. per lb.
 SODIUM ACETATE.—Improvement in demand is noticed and spot supplies offering at £18 to £19 per ton.
 SODIUM BICHROMATE.—A fair business is passing at about 3½d. per lb.
 SODIUM HYPOSULPHITE.—Commercial quality in fair request with Continental prices firmer. Pea photographic quality showing increase in trade at unchanged prices.
 SODIUM NITRITE.—Firm and in good request at £19 10s. to £20 10s.
 SODIUM PRUSSIAN continues firm and in good request at 4½d. per lb.
 SODIUM SULPHIDE.—Export demand reviving and price tending to become firmer.
 ZINC SULPHATE.—A fair business passing at about £12 10s. to £13 per ton.

Coal Tar Products

The market for coal tar products is rather quiet, and there is little change to report in prices since last week.
 90's BENZOL is quoted at 1s. 6½d. per gallon, on rails, and the motor quality is worth about 1s. 5½d. per gallon, on rails.
 PURE BENZOL is worth about 1s. 10d. per gallon, on rails.
 CREOSOTE OIL is unchanged at 7d. to 7½d. per gallon, on rails, in the North, while the price in London is from 8½d. to 8¾d. per gallon.
 CRESYLIC ACID remains very firm, the pale quality, 97/99%, being quoted at 2s. 2d. per gallon on rails, while the dark quality, 95/97%, is worth about 2s. 1d. per gallon.
 SOLVENT NAPHTHA is worth about 1s. 2d. per gallon, on rails.

HEAVY NAPHTHA is quoted at 1s. 2d. per gallon, on rails.
 NAPHTHALENES are unchanged, the 76/78 quality being quoted at £8 5s. to £8 15s. per ton, while the 74/76 quality is worth £7 10s. to £8 per ton.
 PITCH is unchanged. To-day's value is 70s. to 75s. per ton., f.o.b. U.K. ports.

Latest Oil Prices

LONDON, May 18.—LINSEED OIL steady at occasionally 2s. 6d. advance. Spot, ex mill, £33; May, £31 15s.; June-August, £32 7s. 6d.; September-December, £33 7s. 6d. RAPE OIL inactive. Crude, extracted, £44 10s.; technical, refined, £46 10s., naked, ex wharf. COTTON OIL quiet, unchanged. Refined common edible, £42; Egyptian, crude, £36; deodorised, £44, naked. TURPENTINE steady, unchanged to 6d. higher. American, spot, 43s. 9d.; June, 44s.; July-December, 46s.
 HULL, May 18.—LINSEED OIL.—Naked, spot and May, £33 2s. 6d.; June-August, £33 7s. 6d.; September-December, £33 12s. 6d. COTTON OIL.—Naked Bombay crude, £35 10s.; Egyptian crude, £36; edible refined, £40; technical, £38 5s.; deodorised, £42. PALM KERNEL OIL.—Crushed naked, 5½ per cent., £38. GROUNDNUT OIL.—Crushed/extracted, £45; deodorised, £49. SOYA OIL.—Extracted and crushed, £34 10s.; deodorised, spot, £38. RAPE OIL.—Crude/extracted, £44; refined, £46 per ton. COD OIL.—29s. per cwt., net cash terms, ex mill. CASTOR OIL.—Unaltered.

Nitrogen Products

Export.—The market continues quiet but prices remain at £10 7s. 6d. per ton, f.o.b. U.K. port. Continental buyers are purchasing for immediate shipment. There is nothing fresh to report from Central Europe or the United States.

Home Trade.—The home demand is quieter, as the season is nearly over. As early May was quite lively in certain districts, it is anticipated that the total home consumption will be a little in excess of last year.

Nitrate of Soda.—Sales have been made for the new year on the basis of 16s. per metric quintal, but estimates of the quantity vary from 30,000 to 80,000 tons. Apparently there are no ready buyers at this figure. Stocks in Chile continue to augment, despite the closing of several oficinas.

Calcium Cyanamide

A GOOD deal of interest is now being shown in the use of this material for charlock destruction. As announced in our previous issue, the price for May is £9 10s. per ton for 4-ton lots, carriage paid to any railway station in Great Britain.

Canadian Asbestos in 1926

ASBESTOS production in Canada during 1926 reached the grand total of 279,389 tons, with a valuation of \$10,095,487 (an average value of \$36.13 per ton). In 1925 the shipments (exclusive of sand and gravel) amounted to 273,524 tons at \$8,977,546, or an average value of \$32.82 per ton. Asbestos rock mined during 1926 totalled 4,483,361 tons, of which quantity 4,002,626 tons were handled by the mills. Final information covering the production of asbestos in other countries is not yet available, but during the first ten months of 1926 the Rhodesian output amounted to 28,841 short tons and during the same period the South African total was 12,007 short tons. Cyprus production did not commence until May, 1926, and from that date until the end of November the quantity produced was 6,720 short tons. Canada's deposits of asbestos continue to supply by far the greater part of the world's needs of this very important mineral. Situated in the Province of Quebec, about equally distant from the cities of Montreal and Quebec, the asbestos mines provide the principal industry in an area represented by five towns which have grown up about the mines. Mining or quarrying is done mostly in large pits. Veins of chrysotile asbestos run in every direction through the rock, and hand-cobbing is used to sort out the larger samples. Mechanical crushing, drying, and screening are used extensively in the further treatment. Some 50 to 75 tons of asbestos are commonly obtained in the handling of 1,000 tons of rock.

Scottish Chemical Market

The following notes on the Scottish Chemical Market are specially supplied to THE CHEMICAL AGE by Messrs. Charles Tennant and Co., Ltd., Glasgow, and may be accepted as representing the firm's independent and impartial opinions.

Glasgow, May 18, 1927.

THE heavy chemical market has been quieter during the past week and there are no changes of any importance to record, with the exception of citric acid and tartaric acid, which are both dearer. Prices for continental products also are steady.

Industrial Chemicals

ACID ACETIC.—98/100%, £55 to £67 per ton, according to quantity and packing, c.i.f. U.K. ports; 80% pure, £37 10s. per ton, ex wharf; 80% technical, £37 10s. per ton, ex wharf.

ACID BORIC.—Crystal, granulated or small flakes, £34 per ton; powder, £36 per ton, packed in bags, carriage paid U.K. stations.

ACID CARBOLIC, ICE CRYSTALS.—Rather quieter. Nominally 9d. per lb., f.o.b. U.K. ports, but could probably be obtained for less.

ACID CITRIC, B.P. CRYSTALS.—In good demand and price advanced to about 1s. 6½d. per lb., less 5% ex store. Continental quoted 1s. 6½d. per lb., ex wharf.

ACID HYDROCHLORIC.—Usual steady demand. Arsenical quality 4s. 9d. per carboy. Dearsenicated quality 6s. 3d. per carboy, ex works.

ACID NITRIC, 80°.—Quoted £23 5s. per ton, ex station, full truck loads.

ACID OXALIC.—Quoted 3d. per lb., ex store, spot delivery. On offer from the Continent at about 2½d. per lb., ex wharf.

ACID SULPHURIC, 144°.—£3 12s. 6d. per ton; 168°, £7 per ton, ex works, full truck loads. Dearsenicated quality 20s. per ton more.

ACID TARTARIC, B.P. CRYSTALS.—Now advanced to about 1s. 4½d. per lb., ex wharf, but some spot material available at slightly less.

ALUMINA SULPHATE, 17/18%, IRON FREE.—Spot material quoted £5 12s. 6d. per ton, ex store. On offer for early delivery at £5 5s. per ton, c.i.f. U.K. ports.

ALUM, POTASH.—Lump quality quoted £8 per ton, c.i.f. U.K. ports. Crystal powder, 5s. per ton less. Lump on spot, £9 per ton. Crystal powder, £8 10s. per ton, ex store.

AMMONIA ANHYDROUS.—Spot supplies now available at about 9½d. per lb., ex store, containers extra and returnable.

AMMONIA CARBONATE.—Lump, £37 per ton; powdered, £39 per ton, packed in 5-cwt. casks, delivered or f.o.b. U.K. ports.

AMMONIA LIQUID, 88°.—Unchanged at about 2½d. to 3d. per lb., delivered according to quantity.

AMMONIA MURIATE.—Grey galvanisers' crystals of English manufacture unchanged at about £23 to £24 per ton, ex station. Continental on offer at about £20 10s. per ton, c.i.f. U.K. ports. Fine white crystals quoted £18 5s. per ton, c.i.f. U.K. ports.

ARSENIC.—White powdered Cornish quoted £18 2s. 6d. per ton, c.i.f. U.K. ports, prompt despatch from mines. Spot material available at £19 5s. per ton, ex store.

BARIUM CARBONATE, 98/100%.—White powdered quality quoted £6 15s. per ton, c.i.f. U.K. ports.

BARIUM CHLORIDE, 98/100%.—Large white crystals on offer from the Continent at £7 12s. 6d. per ton, c.i.f. U.K. ports, packed in casks. Bags, 5s. per ton less. Spot material quoted £9 5s. per ton, ex store.

BARYTES.—English material unchanged at £5 5s. per ton, ex works. Continental quoted £5 per ton, c.i.f. U.K. ports.

BLEACHING POWDER.—Contract price to consumers, £8 per ton, ex station, minimum 4-ton lots. Spot material 10s. per ton extra. Continental now quoted £7 10s. per ton, c.i.f. U.K. ports.

BORAX.—Granulated, £19 10s. per ton; crystals, £20 per ton; powder, £21 per ton, carriage paid U.K. ports.

CALCIUM CHLORIDE.—English manufacturers' price unchanged at £5 to £5 5s. per ton, ex station. Continental dearer at about £3 17s. 6d. per ton, c.i.f. U.K. ports.

COPPERAS, GREEN.—Unchanged at about £3 10s. per ton, f.o.r. works or £4 12s. 6d. per ton, f.o.b. U.K. ports for export.

COPPER SULPHATE.—Continental material quoted £24 15s. per ton, ex wharf. British material on offer at about the same price, f.o.b. U.K. ports.

FORMALDEHYDE, 40%.—Now offered from the Continent at £38 per ton, c.i.f. U.K. ports. Spot material available at £39 10s. per ton, ex store.

GLAUBER SALTS.—English material unchanged at £4 per ton, ex store or station. Continental now £2 17s. 6d. per ton, c.i.f. U.K. ports.

LEAD, RED.—Imported material quoted £33 per ton, ex store.

LEAD, WHITE.—About £33 5s. per ton, ex store.

LEAD ACETATE.—White crystals quoted £42 15s. per ton, c.i.f. U.K. ports. Brown about £40 5s. per ton, c.i.f. U.K. ports. White crystals on spot quoted £44 5s. per ton, ex store.

MAGNESITE, GROUND CALCINED.—Quoted £8 10s. per ton, ex store, in moderate demand.

MAGNESIUM CHLORIDE.—Quoted £6 6s. 6d. per ton, c.i.f., U.K. ports.

POTASH CAUSTIC, 88/92%.—Solid quality quoted £28 15s. per ton, c.i.f. U.K. ports, minimum 15-ton lots. Under 15-ton lots, £29 10s. per ton. Liquid, £15 per ton, minimum 15-ton lots. Under 15-ton lots, £15 7s. 6d. per ton, c.i.f. U.K. ports.

POTASSIUM BICHROMATE.—Unchanged at 4½d. per lb., delivered.

POTASSIUM CARBONATE, 96/98%.—Quoted £27 5s. per ton, ex wharf, early shipment. Spot material on offer at about £28 10s. per ton, ex store.

POTASSIUM CHLORATE.—Powdered quality on offer £24 5s. per ton, c.i.f. U.K. ports. Spot material, £2 per ton extra.

POTASSIUM NITRATE.—On offer from the Continent at about £20 15s. per ton, c.i.f. U.K. ports. Spot material now quoted £22 per ton, ex store.

POTASSIUM PERMANGANATE, B.P. CRYSTALS.—Quoted 6½d. per lb., ex store, spot delivery.

POTASSIUM PRUSSIAN, YELLOW.—In good demand and price unchanged at about 7½d. per lb., ex store, spot delivery. Offered from the Continent at 7½d. per lb., c.i.f. U.K. ports.

SODA CAUSTIC.—Powder, 98/99%, £19 7s. 6d. per ton; 76/77%, £15 10s. per ton; 70/72%, £14 10s. per ton, carriage paid station, minimum 4-ton lots on contract. Spot material, 10s. per ton extra.

SODIUM ACETATE.—English material quoted £22 5s. per ton, ex store. Some cheap continental lots on offer at about £18 5s. per ton, c.i.f. U.K. ports.

SODIUM BICARBONATE.—Refined recrystallised quality, £10 10s. per ton, ex quay or station. M.W. quality, 30s. per ton less.

SODIUM BICHROMATE.—Quoted 3½d. per lb., delivered buyers' works.

SODIUM CARBONATE (SODA CRYSTALS).—£5 to £5 5s. per ton, ex quay or station; powder or pea quality, £1 7s. 6d. per ton more; alkali, 58%, £8 12s. 3d. per ton, ex quay or station.

SODIUM HYPOSULPHITE.—Large crystals of English manufacture quoted £9 10s. per ton, ex store, minimum 4-ton lots. Continental on offer at about £8 2s. 6d. per ton, ex wharf, prompt shipment. Pea crystals of British manufacture quoted £15 5s. per ton, ex station, 4-ton lots.

SODIUM NITRATE.—Ordinary quality quoted £13 per ton, ex store. Refined quality, 5s. per ton extra.

SODIUM NITRITE 100%.—Quoted £20 per ton, ex store, spot delivery.

SODIUM PRUSSIAN, YELLOW.—Offered for prompt shipment from the Continent at 4½d. per lb., ex wharf; spot material on offer at 4½d. per lb., ex store.

SODIUM SULPHATE (SALTCAKE).—Price for home consumption, £3 7s. 6d. per ton, ex works.

SODIUM SULPHIDE.—60/65%, solid, £11 10s. per ton; broken, £12 10s. per ton; cakes, £12 10s. per ton; flake, £14 5s. per ton; crystals, 31/34%, £7 15s. to £8 10s. per ton according to quality, delivered buyers' works, minimum 4-ton lots on contract. Prices for spot delivery are 5s. and 2s. 6d. per ton extra for solid and crystals respectively. Offered from the Continent at about £9 7s. 6d. per ton, c.i.f. U.K. ports; broken 15s. per ton extra.

SULPHUR.—Flowers, £12 10s. per ton; roll, £11 10s. per ton; rock, £11 10s. per ton; floristella, £10 10s. per ton; ground American, £9 5s. per ton, ex store. Prices nominal.

ZINC CHLORIDE.—British material, 98/100%, quoted £24 15s. per ton, f.o.b. U.K. ports; 98/100% solid on offer from the Continent at about £21 15s. per ton, c.i.f. U.K. ports; powdered, 20s. per ton extra.

ZINC SULPHATE.—Continental material on offer at about £10 10s. per ton, ex wharf.

NOTE.—The above prices are for bulk business and are not to be taken as applicable to small parcels.

Resignations from the New Jersey Zinc Co.

MR. J. A. SINGMASTER, general manager technical department, and Mr. F. G. Breyer, chief of research, resigned their positions with the New Jersey Zinc Co., as from May 1, and have opened a consulting office at 1,640 Graybar Building, 420, Lexington Avenue, New York. Mr. Singmaster's service of twenty-seven years with the Zinc Co. embraced various positions in its large plants at Palmerston, Pa., of which he was general superintendent from 1912 to 1917, leaving that position to become general manager of their technical department. Mr. Breyer was with the company for seventeen years, first as chief of the testing department, and for the last ten years as chief of the research division.

Manchester Chemical Market

(FROM OUR OWN CORRESPONDENT.)

Manchester, May 19, 1927.

Most of the demand for chemicals on the Manchester market during the past week has been for fairly early delivery, although forward positions have aroused rather more interest than has been the case recently. Taking the trade generally, however, it is only of moderate volume.

Heavy Chemicals

In phosphate of soda a quiet business has been done; prices seem to have an easy tendency, current values varying from £12 5s. to £12 10s. per ton. Chlorate of soda, also, seems to be somewhat lacking in steadiness, from 2½d. to 3d. per lb. now being quoted; so far as the demand is concerned there is plenty of room for improvement. Saltcake is maintained at about £3 12s. 6d. per ton and moderate sales are reported. Hyposulphite of soda meets with a fair amount of inquiry and prices seem steady at £9 7s. 6d. for commercial and £15 10s. per ton for photographic. Caustic soda keeps firm at from £14 10s. to £16 10s. per ton, according to quality, and a quietly steady business is being put through. Prussiate of soda shows little change on the week, current quotations being about 4½d. per lb.; inquiry for this material is on somewhat quiet lines. Bichromate of soda keeps fairly steady and meets with a moderate demand at 3d. to 3½d. per lb. The tendency in the case of sulphide of soda is still easy, although values have not actually moved much since last report, ordinary commercial quality being offered at £8 5s. to £8 10s. per ton and 60-65 per cent. concentrated solid at about £10 17s. 6d. Alkali is selling in fair quantities at steady prices, round £6 15s. per ton still being quoted. Bleaching powder is in quietly steady demand at about £8 per ton. Nitrite of soda is a rather slow section of the market and prices are easy at about £19 per ton. The demand for bicarbonate of soda is maintained at about its recent level and values are steady at round £10 10s. per ton. There is only a quiet trade passing in the case of Glauber salts, offers of which are at £3 5s. to £3 7s. 6d. per ton.

A fair demand for bichromate of potash is reported and values are about maintained at 4½d. per lb. Inquiry for chlorate of potash is somewhat sluggish and the tendency is easy, although quotations are still in the neighbourhood of 3½d. per lb. Yellow prussiate of potash is in moderate request with prices at about last week's level of 7½d. to 7¾d. per lb. Sales of carbonate of potash are on a fair scale and values seem firm at about £27 per ton. Caustic potash is being offered at from £29 to £30 10s. per ton, according to quantity, and a quiet trade is being put through. In the case of permanganate of potash there is little alteration to be reported, the commercial material being offered at 5d. to 5½d. per lb. and the B.P. quality at 6½d.

Arsenic still moves off slowly, but values seem to be held at round £16 5s. per ton at the mines, for white powdered, Cornish makes. The demand for sulphate of copper keeps up at a steady level and prices are firm at £25 to £25 10s. per ton. There is not a great deal of inquiry about for acetate of lime, and the tendency appears to be easy at £15 7s. 6d. per ton for grey and £8 5s. to £8 10s. for the brown quality. Acetate of lead is also moving off in relatively small quantities, with white now quoted at £43 to £43 10s. per ton and brown at £41. Nitrate of lead is quiet and easy at round £38 per ton.

Acids and Tar Products

Citric acid is meeting with a fair demand and quotations are very firm and higher at about 1s. 6d. per lb. Tartaric acid has also made a further advance, about 1s. 3½d. per lb. now being asked; inquiry is on moderate lines. Oxalic acid, however, continues rather quiet and easy at round 3d. per lb. Acetic acid continues to be called for in moderate quantities, and values are steady at £66 10s. per ton for glacial and about £37 per ton for 80 per cent. commercial quality.

Export business in pitch is now at the between-seasons' period and prices are at about £3 10s. per ton, although there is little being done. Inquiry for creosote oil, however, remains fairly active and quotations are steady at 7½d. per gallon. Carboic acid is weak at about 8½d. per lb. for crystal and 2s. 5d. per gallon for crude material and the demand is slow. Solvent naphtha remains slow and weak at 1s. 3d. per gallon.

British Alizarine Co. v. Major and Co.

ON Friday, in the Commercial Court, King's Bench Division, Mr. Justice Mackinnon had before him an action by the British Alizarine Co., Ltd., of Manchester, against Major and Co., Ltd., of Norfolk Street, Strand, London, arising out of a contract for the supply of anthracene.

Mr. Miller, K.C., for the plaintiffs, said his clients were manufacturers of synthetic dyes, and the defendants were tar distillers, formerly of Hull and now of London. The dispute arose out of a contract made in March, 1919, for the sale by the defendants to the plaintiffs of a quantity of anthracene, a by-product of tar. The contract was for sale of 500 tons of pure anthracene to be delivered in the form not of pure anthracene, but of crude anthracene. The plaintiffs said, and the defendants denied, that this contract related and was only intended to relate to the defendants' own production and to their own production only. The plaintiffs claimed a declaration that the defendants were not and never were entitled to deliver anthracene other than that produced by the defendants.

Evidence was given in support of the plaintiffs' contention.

Mr. Le Quesne, K.C., for the defendants, contended that under the contract his clients were not debarred from tendering the plaintiffs anthracene which the defendants had not manufactured.

Mr. John L. Major, chairman and managing director of the defendant company, denied that he ever said the defendants would deliver anthracene only of their own manufacture. His firm bought none of the anthracene abroad.

His lordship: It was all British production.

Mr. Major: Yes, all that we delivered to the plaintiffs.

His lordship, in giving judgment, dealt fully with the facts of the case, and said that the question was whether this contract bound the defendants to use their own manufacturing process in producing this anthracene. His lordship did not think it did. The defendants could deliver any crude anthracene which complied with the terms of the contract. The plaintiffs were not entitled to any of the relief they claimed. Judgment was given for the defendants with costs.

Chemicals at the Photographic Fair

AT the Photographic Fair, which was held during the week at the Horticultural Hall, Westminster, London, exhibits of chemical interest were shown by several firms. Burroughes, Wellcome and Co., of Snow Hill, London, exhibited, among other things, their "Tabloid" desensitiser, which permits of developing by candle-light. Another interesting product shown by the company was "Tabloid" Rytol, a developer suitable for producing the fine-grain negatives essential for making enlargements. Johnson and Sons (Manufacturing Chemists), Ltd., of Cross Street, Finsbury, London, showed many of their well-known chemicals for photography—developers such as Amidol-Johnson's, Metol-Johnson's, Glycin-Johnson's, Pyro-Johnson's, Azol, etc.; chemicals such as potassium metabisulphite, alum, sodium sulphite and hyposulphite, potassium bromide, etc., and various products (such as packet developers, etc.) for special purposes. Demonstrations of various processes of photography were also given. Johnson, Matthey and Co., Ltd., of 73-83, Hatton Garden, London, showed specimens of various salts of precious metals used in photography, such as silver nitrate, potassium chloroplatinite, gold chloride, and sodium auric chloride. This company has a department which specialises in recovering gold, silver, and platinum from photographic wastes and residues.

The advantages of scientific methods in photography are well set out in a brochure, *Scientific Simplicity in Photography*, which we have received from Burroughes Wellcome and Co. Much useful information is given on exposure, developing, and after-treatment of negatives and prints. Special attention is given to the use of "Tabloid" desensitiser. The booklet contains time-tables for use for "Tabloid" developers, while at the end is a complete list of the Burroughes and Wellcome range of photographic chemicals. The booklet may be obtained gratis from Burroughes Wellcome and Co., Snow Hill, London.

Company News

CASSEL CYANIDE.—An interim dividend of 3d. per share, less tax, has been declared.

CHLORIDE ELECTRICAL STORAGE.—A dividend of 5 per cent., making 10 per cent. for the year, and a bonus of 2s. per share, both free of tax, are announced.

SCOTTISH OILS.—The directors propose a final dividend of 3½ per cent., less tax, on the preference shares in respect of the year ended March last.

TATE AND LYLE, LTD.—The directors have declared an interim dividend of 4 per cent., less tax, on the ordinary shares on account of the year ending September 30, 1927, payable on June 15.

EASTMAN KODAK OF NEW JERSEY.—The directors have declared the following dividends payable on July 1: Regular dividend of 1½ per cent. on the preferred stock, regular dividend of \$1.25 per share on the common stock, and an extra dividend of \$0.75 per share on the common stock.

CRAIG AND ROSE.—The report for the year ended March 31, 1927, states that the profits amount to £12,951. The directors have written down investment account by £3,000, leaving £9,951, to which is added balance brought forward of £6,728, making £16,679. A dividend of 5 per cent. on the ordinary shares is recommended, carrying forward £6,680.

ARIZONA COPPER CO.—The report to March 31 last states that dividends in the company's holding in Phelps Dodge Corporation, etc., for the year amount to £65,131, while the company's expenses were £15,597. The sum of £5,007 was brought in, and £10,500 has been transferred from reserve account. A dividend of 9d. per share, tax free, is proposed, and £8,044 is carried forward.

W. J. BUSH AND CO.—For the year ended December 31 last the report states that the accounts show a gross profit of £278,436. After providing for debenture interest, expenses, and directors' remuneration, and making allowances for depreciation, there is a net profit of £57,880. To this must be added £53,544 brought forward, less corporation profits tax (since paid), making £111,424. The directors recommend a final dividend of 7 per cent. on ordinary shares, making (with the interim dividend already paid) 10 per cent. for year, placing to general reserve £20,000, and carrying forward £60,174.

BRITISH COTTON AND WOOL DYERS' ASSOCIATION.—The report for the year ended March 31, 1927, states that the profits, after charging administration expenses, £4,176, for specific depreciation, and £59,826 for repairs and renewals, also providing an estimated amount in respect of other contingencies, amount to £108,016; against which have to be charged audit fee and other professional charges, £1,210; interest on first mortgage debenture stock, £24,800, and debenture holders' trustees, £200, showing a profit of £81,085. There has been transferred to depreciation fund (which now stands at £290,000) £25,000, leaving a net profit of £56,805, to which is added £34,179 brought in, giving a balance of £90,984. The directors recommend a dividend on the ordinary shares at the rate of 5 per cent. per annum, placing to reserve fund (bringing that fund to £180,000) £20,000, to employees' benefit fund £5,000, and carrying forward £27,276.

ASSOCIATED LEAD MANUFACTURERS, LTD.—At the annual meeting held on Tuesday, at Winchester House, London, the chairman, in moving the adoption of the report and accounts, said that to further their policy of amalgamation, the business of Foster, Blackett and Wilson, Ltd., had been absorbed, and this investment carried with it a substantial portion of the ordinary share capital of the well-known business of Alexander Fergusson and Co., of Glasgow. In the course of the year they also took advantage of the opportunity to acquire a large holding in a further lead manufacturing concern. As to the investment in their German company, the plant was extended and the output more than doubled. The competition both at home and abroad was maintained with increased severity, and although their tonnage was well maintained the margins were considerably reduced. This competition was made worse in this country by the fact that the prices at which foreigners sold here were far below those within their own country, into which we could not get by reason of tariffs, and, of course, in many countries they were still further helped by the rate of exchange.

Tariff Changes

FRANCE.—A law dated April 16 provides that opium (Tariff No. 123) may now be imported into France free of duty, subject to the conditions governing the import of poisons and narcotics, and increases the Customs duties to 20 and 80 per cent. *ad valorem* under "Minimum" and "General" Tariffs respectively on codeine and its salts (Tariff No. 0351), morphine and its salts (Tariff No. 0358), acetylmorphine and ethyl morphine and their salts (Tariff No. 0359), and on cotarnine, marceine, narcotine, papaverine, thebain and apomorphine and their salts (Tariff No. 0359 *bis* — new number).

ITALY.—Two Decree Laws just passed provide that anthralinic acid, benzoic aldehyde, benzyl chloride, to be used in the manufacture of synthetic perfumes may be admitted free of duty, subject to rules and conditions laid down by the Minister of Finance, and that "metallic" sodium, for use in the manufacture of synthetic indigo, shall be admitted free of duty, subject to rules and conditions laid down by the Minister of Finance.

BRITISH INDIA.—Extensive alterations have been made in the tariff valuations for British India, and affect chemicals, drugs, medicines, dyes, colours. The *Board of Trade Journal* for May 12, pp. 532-541, should be consulted for full details.

CZECHOSLOVAKIA.—As a result of the termination of the Commercial Treaty between Austria and Czechoslovakia, rates of duty fixed by the Treaty on certain classes of goods have lapsed and are replaced by the duties of the Czechoslovak "General" Tariff, except where lower duties are already fixed between Czechoslovakia and other countries. Soda, bicarbonate of soda, and certain other chemicals, ink, tar, soap and medical soap are now subject to increased duties, particulars of which may be obtained from the Department of Overseas Trade, 35, Old Queen Street, London, S.W.1.

GREECE.—A recent Decree lays down standards to which unrefined petroleum or mineral naphtha and Diesel oil must conform in order to be considered unfit for lubricating purposes and to which mazout must conform, in order to be considered unfit for lubricating purposes. Where the Petroleum Monopoly is in force the import of the mineral oils and mazout which do not conform to these standards is prohibited. A further Decree lays down standards to which benzine must conform in order to be imported free of duty by olive oil manufacturers for use in the extraction of oil from olive kernels and oil seeds.

ROUMANIA.—The export of caustic soda and manganese is permitted without special permit on payment of legal export duties, according to a recent Decree, and the export of goods hitherto subject to duty of 20 per cent. *ad valorem* plus commission tax of 2 per cent. is now exempt from such duty or tax.

Chemical Trade Inquiries

The following inquiries, abstracted from the "Board of Trade Journal," have been received at the Department of Overseas Trade (Development and Intelligence), 35, Old Queen Street, London, S.W.1. British firms may obtain the names and addresses of the inquirers by applying to the Department (quoting the reference number and country), except where otherwise stated.

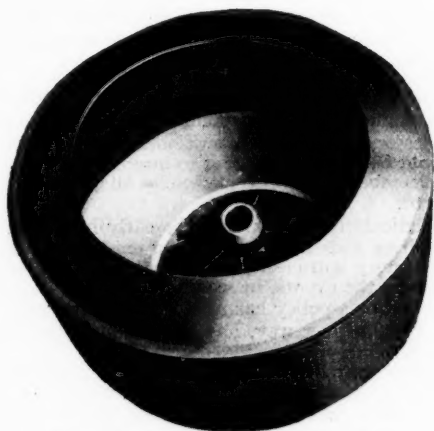
THREE MOTOR-DRIVEN CENTRIFUGAL HYDRO-EXTRACTORS.—The general manager and secretary of the Australian Gas Light Co., Sydney, is inviting tenders for the supply and delivery of three motor-driven centrifugal hydro-extractors. Tenders will be received at Sydney up to June 30, 1927. Firms in a position to offer British plant can obtain further particulars on application to the Department of Overseas Trade. (Reference A.X. 4,694.)

PAINTS, VARNISHES, ETC.—A native firm of manufacturers' agents, importers, etc., in the Bombay Presidency, are desirous of undertaking the representation in that territory of British manufacturers. (Reference No. 497.)

ORES, METALS, CHEMICAL AND PHARMACEUTICAL PRODUCTS.—An agent in Cologne desires to secure the representation, on a commission basis, for Rhineland and Westphalia, of important British manufacturers or dealers in the above, especially those interested in quicksilver and crude iodine. (Reference No. 506.)

MALT EXTRACT.—A firm of wholesale commission brokers in Winnipeg desire to obtain an agency. (Reference No. 498.)

163/3/64



The photograph shows a Basket for Centrifugal Machine made of Firth "Staybrite" Steel.

FIRTH "STAYBRITE"

(the new super-rustless and super-malleable steel) has a yield point of about 15 tons per square inch and an elongation of 55% to 70%. This exceptional ductility is combined with maximum corrosion-resisting qualities, which it possesses to a remarkable degree. It may be cold-pressed to a degree far in advance of the so-called "Stainless Iron," and, moreover, it presents no difficulties in manipulation, since it can be welded, soldered, brazed and riveted, without trouble.



COMBATING CORROSION

IF, in the machinery you build or operate, there is one single part which is exposed to the corroding influences of moisture, chemicals, food acids or hot gases—if that one detail corrodes, and in corroding, weakens, loses efficiency, leaks or contaminates your product—that one part would be better made from

FIRTH "STAYBRITE"

—the super malleable, super rustless steel.

Firth "Staybrite" is obtainable in the form of:—

**BARS, STRUCTURAL SECTIONS,
STRIP, SHEETS, PLATE, WIRE,
TUBE, FORGINGS AND CASTINGS.**

A full description of the qualities and uses of this unique steel is contained in our book E.3. May we send you a copy?



THOS. FIRTH & SONS LTD., SHEFFIELD

Commercial Intelligence

The following are taken from printed reports, but we cannot be responsible for any errors that may occur.

Mortgages and Charges

[NOTE.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every Company shall, in making its Annual Summary, specify the total amount of debts due from the Company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case the total debt, as specified in the last available Annual Summary, is also given—marked with an *—followed by the date of the Summary, but such total may have been reduced.]

ISLAND TRADING CO., LTD., London, E.C., tanning extract manufacturers. (M., 21/5/27.) Registered May 6, £5,000 debentures part of amount already registered; general charge. *Nil. June 9, 1925.

Satisfactions

SOUTH AFRICAN CARBIDE AND BY-PRODUCTS CO., LTD., London, W. (M.S., 21/5/27.) Satisfaction registered May 10, balance outstanding of £20,000 and £10,000 debentures registered April 8, 1922, and July 31, 1924, fully satisfied.

STANDARD AMMONIA CO. OF SYDNEY, LTD., London, E.C. (M.S., 21/5/27.) Satisfaction registered May 4, £2,500, part of amount registered August 1, 1907.

Receiverships

MILES (C. F.) AND CO. (BIRMINGHAM), LTD. (R., 21/5/27.) T. H. Platts, of 32, Union Street, Birmingham, ceased to act as receiver or manager on April 11, 1927.

SOUTHDOWN CHEMICAL CO., LTD. (R., 21/5/27.) C. Milnes, of 56 and 57, Hamilton Square, Birkenhead, ceased to act as receiver or manager on October 27, 1925, of certain land forming part of the assets of the company in a mortgage to G. A. Solly, under deed dated December 21, 1922, upon conveyance of the said land to R. M. Downie by the liquidator of the company. (Notice filed May 5, 1927.)

New Companies Registered

BRITISH BARYTES, LTD. Registered May 11. Nom. capital, £6,000 in £1 shares. To acquire the business of barytes grinders and refiners carried on by the Barnsley Chemical Co., Ltd., at Silkstone Common, near Barnsley. Directors:—J. H. Clay, The Manor House, Thornton-in-Craven; H. Jones, and H. A. Dawson.

CHARNELL SOAP AND OIL CO., LTD., 40, Radford Street, Blackley, Manchester. Registered May 10. Nom. capital, £100 in £1 shares. To acquire the business carried on at Radford Street, Blackley, Manchester, by A. H. Albert, and to carry on the business of dealers in soap and oils and other chemical products, etc. Directors:—H. Bowes, J. Lamb, and A. H. Albert.

R. S. SUTTON, LTD., 20, St. Anne's Square, Manchester. Registered May 10. Nom. capital, £100 in £1 shares. Chemists, druggists, drysalter, oil and colourmen, etc.

Olivite Acid Pumps

ALTHOUGH in the past decade there has been considerable developments in hydraulic machinery, acid pump progress has been retarded owing to the lack of a suitable non-corrosive material.

Rubber has long been recognised as a possible material, but its physical properties have prevented its adoption to the purpose.

The Oliver Continuous Filtration Co., 11-13, Southampton Row, London, has now produced a pump which is claimed to embody all the features desirable in a pump to be used in chemical industry, and to eliminate the undesirable features. This has been made possible by the use of Olivite, which is used for acid-proofing the pump, and is made on a hard rubber base; it has all the chemical resistant qualities of hard rubber, but none of its physical defects. The pumps are non-corrosive to all mineral and organic acids and salts except concentrated nitric, and will handle solutions even at temperatures close to their boiling points.

Oliver products also include compressors, centrifugal pumps, and the well-known Oliver continuous filters.

The British Association of Chemists

"A Matter of History"

THE Association attains its tenth birthday this year, and a history is now being written in honour of that event. There are some who might suggest that ten years is too short a time to justify a venture of this kind, but events have certainly moved quickly in that time, and some of them have been very interesting events indeed.

The Association has always claimed to be representative of the whole profession, in the sense that it mirrors every kind of genuine professional opinion, that of employer, employee, professor, and private practitioner. In this history book there should be found something to interest all these, whether they are members of the Association, as all good chemists should be, or not.

Particularly in regard to the early history, a great deal of obscurity and misunderstanding exists, but this, we believe, the history will clear up. It will be noted by all who have followed the events, in reading this book, how very little the Association's policy has altered, and how great a quantity of work, in a quiet way, has been done in the endeavour to be true to that policy.

Some errors, doubtless, there will be, and some matters for controversy found; but if the avoidance of all such were rigidly enforced upon a historian, and particularly a contemporary historian, no history would be written at all.

It is hoped that the book may have a wide circulation, and that it will be seriously and critically read. For the reason already indicated, it is in some sense a history of the whole profession of chemistry in the last ten years; that is a question which should interest every chemist with any professional instinct at all.

The work should be complete in about three months time, and it is hoped that it may be published towards the end of the year. It will not be long; it should not be dull; its cost will not be great.

H. T. F. R.

Aluminium for Publicity Coachwork

WHEN a commodity or its container is capable of attractive duplication as a van body, the advertiser has a valuable means of publicity at his disposal. To quote one writer, such a vehicle has "a publicity value running into thousands of pounds, and this quite apart from its utility as a means of transport." This applies not only to specially shaped vehicles. A striking pictorial representation of a proprietary article in one of its common uses is equally effective. For each of these forms of advertising bodywork, aluminium affords a unique combination of qualities: malleability, which permits of an extent of detail and shapeliness otherwise unobtainable; lightness, which minimises fuel consumption, tyre wear and other running charges; exceptional painting surface; and, rustlessness, which together reduce the cost of both original painting and maintenance. A number of examples of vehicles of this kind will readily come to mind, and the manner in which they arrest attention is remarkable. The British Aluminium Co., Ltd., of Adelaide House, London, E.C.4, has issued an interesting pamphlet on the subject, in which are given illustrations of various car-bodies of this kind. The pamphlet performs a useful service in discussing the legal aspect of the use of publicity vehicles.

Benn Brothers' Other Journals

THE CABINET MAKER.—The Trade Unions Bill; Review of the "Practical Decoration of Furniture"; Future of Furnishing; Farther Correspondence.

THE ELECTRICIAN.—The Royal Society Conversation; "The Trade Unions Bill," by Sir E. J. P. Benn; Voltage Regulating Equipment.

THE FRUIT GROWER.—Digest of Latest Research; Frost and New Fruit Problems; Improving Strawberry Strains.

GARDENING ILLUSTRATED.—The Chelsea Show, Preliminary Number; Soils for Alpine Plants; Novelties in Tulips; A Collection of Blue Poppies.

THE GAS WORLD.—Sir Ernest Benn on the Trade Unions Bill; Thoughts on Gas Distribution; Some Gas Patents.

THE HARDWARE TRADE JOURNAL.—Ironmongers Federation Conference Number: Full illustrated Report of papers and speeches; Legal Points for Ironmongers; Railway Rates Revision.

THE TIMBER TRADES JOURNAL.—Seasoning, Shrinkage, and Twist; Douglas Fir Exports; Band Saw Wheels.

